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# PAPER TRADE JOURNAL

With Which Is Combined

Vol. XC, No. 25 — PAPER — Thursday, June 19, 1930

# New Tariff Becomes Law This Week

## Passes Senate and House Last Week and Will Be Signed Immediately By President Hoover—Casein Has Been Raised From 2½ Cents to 5½ Cents and Fourdrinier Wires Advance From 30 Per Cent to 50% In the New Bill—Details of the Change From the Old Law To the New In the Paper Schedule

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1930.—The Hawley-Smoot tariff bill will become effective before the end of the week. It was passed by the Senate Friday and by the House Saturday of last week. President Hoover announced Sunday night that he would sign it immediately. He is expected formally to approve the measure Tuesday or Wednesday. The new tariff rates will become effective the day following the passage of the act.

Schedule 14. Paper and Books is presented herewith showing the changes from the existing rates fixed in the Hawley-Smoot Bill. The items on which the rates are the same as in the existing tariff rates are not included.

Casein and casein mixtures under the old law was 2½ cents and has been raised in the new bill to 5½ cents. Fourdrinier wires under the old rate were 30 per cent and have been raised in the new bill to 50 per cent.

SCHEDULE 14.—PAPER AND BOOKS

| COMMODITY | Rate of Duty—Fordney-McCumber Tariff, 1922 | Rate of Duty—Hawley-Smoot Bill, 1930 |
|---|---|---|
| Pulpboard in rolls for use in the manufacture of wallboard | 5% | 10% |
| Manufactures of pulp, n. s. p. f. | 25% | 30% |
| Tissue paper, &c.: | | |
| Tissue, stereotype, copying, india, bible, condenser, carbon, bibulous, pottery, and similar papers, n. s. p. f.—Weighing not over 6 pds. to the ream (20 by 30 in.) (lb.) | 6c. +15% | 6c. +20% |
| Covered with metal or its solutions and weighing less than 15 pds. per ream, basis 20 by 25 inches, 480 sheets (lb.) | 5c. +17% | 5c. +18% |
| Decorated or covered with a design, pattern or character (lb.) | 4½c. | 4½c. +10% |
| Decorated or covered with a design, pattern, or character and, if embossed, printed, or covered with metal or its solutions, gelatin or flock (lb.) | 4½c. +17% | 4½c. +10% +10% |
| Decorated wrapping paper: | | |
| Decorated or covered with a design, pattern or character (lb.) | 4½c. | 4½c. +10% |
| Decorated or covered with a design, pattern, or character, and if embossed, printed, or covered with metal or its solutions, gelatin or flock (lb.) | 4½c. +17% | 4½c. +10% +10% |
| Lithographic transparencies: | | |
| In not more than five printings | 25c. lb. | 40% |
| In more than five printings | 25c. lb. | 50% |
| Decalcomanias: | | |
| In ceramic colors, weighing not over 100 pounds per 1,000 sheets, 20 by 30 inches (lb.) | 70c. +15% | $1.25+15% |
| Weighing over 100 pounds per 1,000 sheets, 20 by 30 inches (lb.) | 22c. +15% | 30c. +15% |
| Paper tubes for holding yarn (parallel) (lb.) | 35% | 1c. +25% |
| Paper tubes for holding yarn (tapered) (lb.) | 35% | 3c. +35% |
| Post cards (except American views): | | |
| Lithographically printed— | | |
| Not exceeding 0.012 in. thickness (lb.) | 25c. | 30c. |
| Exceeding 0.012, not exceeding 0.020 inch thickness, in dimensions— | | |
| Less than 35 square inches (lb.) | 10c. | 15c. |
| Die cut or embossed (lb.) | 10½c. | 15¾c. |
| Die cut and embossed (lb.) | 11c. | 16½c. |
| 35 square inches and over (lb.) | 9½c. | 12c. |
| Die cut or embossed (lb.) | 10c. | 12¾c. |
| Die cut and embossed (lb.) | 10½c. | 13½c. |
| Exceeding 0.020 inch in thickness (lb.) | 7½c. | 8¾c. |
| All other lithographically printed matter, n. s. p. f.: | | |
| Not exceeding 0.012 inch in thickness (lb.) | 25c. | 30c. |
| Exceeding 0.012, not exceeding 0.020 inch in thickness in dimensions— | | |
| Less than 35 square inches (lb.) | 10c. | 15c. |
| Die cut or embossed (lb.) | 10½c. | 15¾c. |
| Die cut and embossed (lb.) | 11c. | 16½c. |
| 35 square inches and over (lb.) | 9½c. | 12c. |
| Die cut or embossed (lb.) | 10c. | 12¾c. |
| Die cut and embossed (lb.) | 10½c. | 13½c. |
| Exceeding 0.020 inch in thickness (lb.) | 7½c. | 8¾c. |
| Envelopes: | | |
| Ruled, bordered, embossed, printed, lined or decorated, except lithographic, made from— | | |
| Wrapping paper— | | |
| Kraft | 40% | 30%+10% |
| Of Manila rope, jute, &c. | 40% | 30%+10% |
| Wrapping paper, n. s. p. f. | 40% | 30%+10% |
| Writing paper, note, drawing and similar papers weighing 7 pounds and over per ream— | | |
| Writing, letter and note paper— | | |
| Ruled, bordered, embossed, printed, lined or decorated ((lb.) | 3c. +35% | 3c. +25% +10% |
| Not ruled, bordered, embossed, &c. (lb.) | 3c. +25% | 3c. +15% +10% |
| All other— | | |
| Ruled, bordered, embossed, printed, lined or decorated (lb.) | 3c. +35% | 3c. +25% +10% |
| Not ruled, bordered, embossed, &c. (lb.) | 3c. +25% | 3c. +15% +10% |
| Plain, made from— | | |
| Wrapping paper | 35% | 30%+5% |
| Writing, letter, note, drawing and similar papers weighing 7 pounds or over per ream— | | |
| Writing, letter and note paper— | | |
| Not ruled, bordered, embossed, &c. (lb.) | 3c. +20% | 3c. +15% +5% |
| All other— | | |
| Not ruled, bordered, embossed, &c. (lb.) | 3c. +20% | 3c. +15% +5% |
| Lithographed, made from— | | |
| Wrapping paper | 60% | 30%+30% |
| Writing, letter, note, drawing and similar papers weighing 7 pounds or over per ream— | | |
| Writing, letter and note paper— | | |
| Ruled, bordered, embossed, &c. (lb.) | 3c. +55% | 3c. +25% +30% |
| Not ruled, bordered, embossed, &c. (lb.) | 3c. +45% | 3c. +15% +30% |
| Photographic paper: | | |
| Plain basic photographic paper for albumenizing, sensitizing, baryta coating or for photographic process (lb.) | 3c. +15% | 5% ;20% |
| Albumenized, sensitized or coated for photographic purposes (lb.) | 3c. +20% | 5% ;25% ;30% |
| Hanging paper: | | |
| Printed, lithographed, dyed or colored (lb.) | 1½c. +20% | 1½c. +20% |
| Cover paper, plain, uncoated and undecorated | ¼c. +10% | 30% |
| Books of paper or other materials for children's use, not exceeding in weight 24 ounces each. | 25% | 15% |

# Big Canadian News Print Merger Confirmed

## Lord Rothermere and Sir Herbert Holt Arrange Deal In London Which Unites Anglo-Canadian Pulp and Paper Mills and Canada Power & Paper Corp. — Unit Will Be Largest News Print Company In British Empire With Daily Capacity of 2,500 Tons

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 16, 1930.—The merger of the Anglo-Canadian Pulp and Paper Mills, Ltd., with the Canada Power and Paper Corporation, forecast in last week's issue of the PAPER TRADE JOURNAL, is now officially confirmed. The deal was arranged in London between Lord Rothermere, president of the Anglo-Canadian, and Sir Herbert Holt, chairman of the board of Canada Power.

### Lord Rothermere's Statement

Lord Rothermere has given out the following statement on the subject:

"After due consideration of conditions affecting the future of the news print industry, the directors of Anglo-Canadian Pulp and Paper Mills, Ltd., and the directors of Canada Power and Paper Corporation have agreed that it will be advantageous to amalgamate.

"The amalgamation is to be effected through the assumption by Canada Power and Paper Corporation of the existing guarantee of the debentures of Anglo-Canadian Pulp and Paper Mills, the guaranteeing of the dividends on the 7 per cent cumulative preference shares, and the exchange of the ordinary shares of Anglo-Canadian Pulp and Paper Mills for common shares of Canada Power and Paper Corporation on the basis of 2¼ shares of the capital stock of the latter corporation for one ordinary share of Anglo-Canadian Pulp and Paper Mills.

"The result will be that the present holders of Anglo-Canadian Pulp and Paper Mills ordinary shares will become large shareholders in Canada Power and Paper Corporation. The properties of Anglo-Canadian Pulp and Paper Mills will immediately become an important unit in the largest news print manufacturing company in the British Empire—and should enjoy the advantages in management and operations accruing therefrom.

"Although the guarantee of the debentures is assumed by Canada Power, owners of the debentures will continue to hold the guarantee of Daily Mirror Newspapers, Ltd., and Sunday Pictorial Newspapers (1920), Ltd., which are the companies that guaranteed the issue prior to the public offer in England.

"The daily capacity production of the combined companies will be approximately 2,500 tons of news print, plus a large tonnage of pulp, kraft and board papers.

"Present shareholders of Anglo-Canadian Pulp and Paper Mills, Ltd., will be represented on the board of directors of Canada Power and Paper Corporation, of which approximately 97 per cent of the stock will be held by British and Canadian investors."

### Sir Herbert Holt's Statement

Sir Herbert Holt has cabled the following announcement from London:

"Lord Rothermere's statement with regard to the amalgamation of Anglo-Canadian Pulp and Paper Mills, Limited, with Canada Power and Paper Corporation sets forth the facts. It has been considered desirable by the directors of both companies to amalgamate the businesses, inasmuch as the geographical location of the properties involved lends itself to operation under single management.

"In addition to the physical advantages that should result from this consolidation, the fact that British interests, as represented by Lord Rothermere and his associates, will become major shareholders in Canada Power and Paper Corporation should be constructive in tending further to increase the interest of the British investing public in Canadian enterprises."

The consolidation results in the formation of the largest news print manufacturing corporation in the British Empire. Furthermore it brings together two of the most important financal groups in England and Canada, thus strengthening materially the British influence in the largest manufacturing industry of the Dominion.

No new capital issue is contemplated. The merger will be effected by the exchange of the ordinary shares of Anglo-Canadian Pulp and Paper Mills for common shares of Canada Power and Paper Corporation on the basis of 2¼ shares of the capital stock of the latter corporation for one ordinary share of Anglo-Canadian Pulp and Paper Mills. Canada Power and Paper will assume the outstanding debenture obligations of Anglo-Canadian Pulp and Paper Mills, and will guarantee the dividends on the outstanding 7 per cent, cumulative preference shares of Anglo-Canadian Pulp and Paper Mills.

### The Rothermere Interests

Lord Rothermere, who is president of the Anglo-Canadian Company, is to become a director of Canada Power and Paper Corporation. He has been prominent in British affairs for many years and is well known in Canada and the United States as a publisher and newspaper proprietor, as well as through financial and industrial activities in other directions.

He was associated with his elder brother, the late Lord Northcliffe, throughout the latter's successful career, and has been chiefly responsible for the business administration and constructive financial policy of the companies controlling the *Daily Mail*, the *Daily Mirror*, the *Evening News*, the *Sunday Dispatch* and the *Sunday Pictorial* all of which have enjoyed unbroken prosperity during many years. The *Daily Mail* and the *Evening News* have the largest newspaper circulations in the world, the circulation of the *Daily Mail* being nearly two million copies a day. The *Sunday Dispatch* has a circulation of well over 1,300,000 copies a week.

When Lord Northcliffe died, Lord Rothermere not only assumed direction of these publications, but added to them by purchasing the Hulton Press and other properties, until at the end of 1923, he was regarded as the dominent influence in the British publishing world, with newspaper circulations that were estimated to reach a large percentage of the reading public in the British Isles.

Lord Rothermere later sold a number of the Hulton papers and a group of weekly and monthly periodicals, to Sir William Berry, and further consolidated his position by amalgamating others of his publications. In 1928, however, he followed this by announcing and inaugurating the largest project in British newspaper history.

This was the formation of Northcliffe Newspapers, Ltd., for the purpose of establishing modern evening newspapers in a dozen or so of the larger provincial cities in England, Scotland and Wales. The public subscribed to this project, within a few minutes of the opening of the lists, a Debenture issue of £3,000,000. Evening newspapers have already been inaugurated by this company in a number of important centres and the extension of its business is progressing continuously.

### The Anglo-Canadian Properties

The Anglo Canadian Pulp and Paper Mills own a news print mill near Quebec City, with a site of about 70 acres on tide water and with deep water frontage on the St. Lawrence River suitable for ocean-going vessels.

It also controls large and valuable timber reserves. The limits originally acquired by the company are situated on the Manicougan River, and those limits, together with others subsequently acquired, are estimated to contain more than 10,000,000 cords.

The equipment of the mills includes four 234-inch Fourdriniers, the widest trimmed sheet being 221 inches. The capacity is 1,000,000 lbs. of news print per day, 860,000 lbs. of ground wood, and 250,000 lbs. of unbleached sulphite fiber.

The company obtains power from Shawinigan Water and Power Company under a favorable contract running for twenty-five years from 1927, with option of renewal for a further period of twenty-five years.

The directors of the Anglo-Canadian Pulp and Paper Mills, Ltd., are as follows:

Viscount Rothermere, president; Frank W. Clarke, vice-president; Sir Herbert Holt, Hon. Smeaton White, Montreal, Sir Charles Fitzpatrick, Quebec; R. C. McMichael, Montreal; John Cowley, London; E. A. Sursham, London; Frank J. Humphrey, New York; Hon. Esmond Harmsworth; R. A. McInnes, Quebec; A. E. Linforth, London; W. J. Clarke, Quebec and J. D. Gilmour, Quebec.

### The Canada Power Properties

The Canada Power and Paper Corporation, which produces more than 20 per cent, of all news print manufactured in Canada, and more than 9 per cent. of the entire world's output, is a consolidation of five large news print manufacturing companies. The principal properties are Belgo-Canadian mill, St. Maurice mill, Laurentide mill, Port Alfred mill and Wayagamack mill. Each property is a self-contained manufacturing unit—thoroughly efficient in every respect. All of the five mills have facilities for making their own ground wood pulp and sulphite pulp. The Wayagamack division, in addition to manufacturing news print, owns and operates one of the largest kraft paper mills in the world.

The mills are situated at Shawinigan Falls, Grand'Mere, Three Rivers, Cap de la Madelaine and Port Alfred—all in the Province of Quebec—and the three latter are at tide-water, which constitutes an important advantage in making ocean shipments.

The corporation has other important interests and is provided with low-cost power, each mill being situated close to a large hydro-electric development. Its timber areas embrace more than 21,600 square miles and are estimated to contain approximately 90,000,000 cords of pulpwood. Without reforestation, this is sufficient to last more than seventy years at full capacity production of 2,900 tons of newsprint and other paper daily.

### Details Completed in Another Merger

Letters are now going forward to shareholders of the St. Lawrence Paper Mills, Brompton Pulp and Paper Company, and Lake St. John Power and Paper Company containing final details regarding the St. Lawrence Corporation, Ltd., which has been formed to take over the properties of the three companies. These letters carry instructions to shareholders regarding the turning of their shares for the stock of the new company, St. Lawrence Corporation, Ltd. All the various legal details have been arranged, it is stated.

Various large holders of stock of the constituent companies have turned in their securities for exchange, thus giving effect to the amalgamation of the three firms and placing control with St. Lawrence Corporation, Ltd., through common stock ownership. It is anticipated by the banking interests that during the next week or so, substantially all of the holders of the smaller blocks of shares will have exchanged their holdings for stock in the new holding company.

This brings to a conclusion one of the largest news print consolidations in Canada in recent years, the three constituent companies representing a daily productive capacity of 1,000 tons of news print, 100 tons kraft and 70 tons of box board. Freehold and leasehold timber lands, water power, real estate, buildings and equipment, etc., of the new corporation, less reserves for depreciation and depletion, amount to more than $49,000,000.

The management of the corporation believe that the earnings of the constituent companies will be substantially increased as a result of unified operations. It may be assumed that with the completion, or substantial completion, of the exchange of shares the management will proceed forthwith to give effect to operating economies made possible by the consolidation.

### The Price of News Print

Taken as indicating the improved relations between publishers and news print manufacturers over the prospect of an increase in the price of news print, publicity is being given locally to an interview with Don C. Seitz, of New York, which appeared in "Publishers' Service," approving of the proposed $5 increase in news print over a period of three years.

Mr. Seitz, who was formerly business manager of the *New York World*, and was for fifteen years chairman of the A.N.P.A. News Print Committee said if newspaper publishers viewed the situation with proper economic foresight, they would willingly agree to the $5 increase, and call this proposal more than fair.

Above all else, Mr. Seitz told his interviewer, the publishers should willingly pay the news print manufacturers a fair profit so that tree supply may be preserved. Meeting the proposed increase would not endanger the profits of American newspapers, he said.

It is recalled that when chairman of the news print committee, Mr. Seitz was a firm believer that newsprint manufacturers were entitled to $6-a-ton profit. He holds to that view today and adds that the manufacturers should be allowed a sum for sinking fund purposes for reforestation.

"Stumpage dues exacted by Canada hardly provide enough for this purpose," Mr. Seitz said. "Surely no one denies the right of the State to collect this taxation, especially when the product derived from the State lands is turned into colossal profits elsewhere."

Mr. Seitz said that today it was only through the sale of water power that news print mills are able to exist. He pointed out that International Paper and Power "donated" nearly six million dollars to American newspapers last year, through news print sale losses.

"Publishers apparently fail to realize that they are dealing with a foreign Government. Our own forests are gone, and now our publishers are seeking to destroy their next best source. If they would view the situation with the proper economic foresight they would know that reproduction should be preserved; be made invincible. At present they are being unfair to news print manufacturers and to nature. Nature, however, takes care of her own revenge."

Mr. Seitz further pointed out that while publishers of dailies are resisting an advance from $55 a ton, many publishers of weekly papers, who buy in carload lots and from the mill, have been paying as high as $70 a ton during the year.

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## I. P. Moves General Offices

The International Paper Company has moved its general offices from 100 East 42nd street, New York to the recently completed Daily News Building at 220 East 42nd street, where it has taken the upper fourteen floors, from the twenty-third to the thirty-sixth floor. Into this space have been concentrated the main offices of its Continnental Paper and Bag Corporation, Ticonderoga Pulp and Paper Company, Veldown Company, and various other subsidiary organizations. The move has enabled the company to consolidate its main office operations and to coordinate departments more closely.

The offices command a splendid view of New York City and its environs. To the south, the lower harbor and the Statue of Liberty may be seen easily on clear days; to the west, the view extends over the Hudson and Hackensack Rivers to the Orange Mountains; to the north, the cities of Yonkers and Mount Vernon lie in the distance; and to the east the view is out over central Long Island.

# News of the Fox River Valley Paper Mills

## Plant and Machinery of Menasha Paper Mills Co., of Menasha, Wis., To Be Sold At Public Auction, June 21—Consolidated Water Power & Paper Co., of Wisconsin Rapids, Places Operating Schedule One Hour Ahead for Summer Season

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 16, 1930.—Difficulties encountered some time ago have culminated for the Menasha Paper Mills Company, of Menasha, Wis., in an order issued by the court to dispose of the plant and machinery at a Sheriff's sale on June 21. The sale is to be held at the Court House at Oshkosh, Wis. In the meantime the mill has been closed down, and its fifty employees are idle.

Following the failure of the Island Paper Mill several years ago, a new company took hold of the mill and started the production of straw board and the corporation was called the Menasha Paper Mills Company. Financial difficulties were again encountered, with the result that some of the large creditors applied for a receivership. This was granted January 19, 1929, and J. M. Levin and C. H. Jaynes were appointed. They have operated the mill since that time, with Mr. Levin as receiver-manager.

### Market Conditions Prevented Operations

Market conditions have prevented operations except at a loss, and readjustment was considered imperative. Notice therefore was served on creditors and the mill put up for sale. It is believed that a purchaser will be found so the mill can resume soon. This is a two machine mill, with Fourdriniers of 63 and 74-inch sheet width. The capacity is 30 tons daily.

### J. M. Conway Discusses Paper Mill Safety

Some highly interesting deductions concerning paper mill safety are contained in the address made by Joseph M. Conway at the recent conference of the Fox River Valley and Lake Shore Safety Council at Green Bay. Mr. Conway is president of the Hoberg Paper and Fibre Company, and spoke at the paper mill section of the conference. He said in part:

"The search for some solution of the problem for the prevention of accidents and the promotion of safety has been advanced, but my view is, that the only solution of the problem to accomplish the greatest results is education, and this will, of necessity, be made obligatory on the part of management in industry, as well as executives of our state and federal governments.

### No Longer Humanitarian Alone

"The safety movement is no longer one for the humanitarian alone. It has become good business. It brings profit to all the public, employer and employee. With the enactment of the 'Workmen's Compensation Law' in Wisconsin and later in other states, industry demanded executives of varied talents and ingenuity. For the first time it was discovered that accidents were very costly and unprofitable to employer and employee. The old executive was concerned primarily in developing modern machinery and horse power. Today they are giving consideration to the human element in industry. When the human element is considered, the fundamentals of efficiency are their happiness, contentment and safety in their work as well as their homes."

"Organization for the prevention of accidents must begin at the top. Policies must be formulated by the manager and carried down to the men actually at work on the machines, floors, trucks, etc."

### Suggest Accident Prevention Methods

In stating that every possible chance of accident must be removed, Mr. Conway suggested the following: Machine guards, proper lighting, cleanliness and good ventilation; an adequate survey of the employee when he applies for work; placing the employee at a task which physical condition or mentality will justify; recognition of home conditions of an employee; pleasant factory or employment surroundings. "Not only will better employment and home conditions lower accident liability, but they will pay for themselves in increased output and less wear and tear on production equipment," he said.

### George W. Mead Honored

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., was elected president of the League of Wisconsin Municipalities at the annual convention of the organization last week. The league is made up of Mayors and other officials of cities in Wisconsin. Mr. Mead is serving his third term as Mayor of his home city. His election came about because he had favored in the past the league's platform of public ownership of utilities.

### Tomahawk Saves Home City from Depression

The Tomahawk Kraft Paper Company, Tomahawk, Wis., is credited with keeping its home city from depression during a crisis. The city had a disastrous fire in its business district, a bank closing and the suspension of operations by its other paper mill, the Tomahawk Pulp and Paper Company. In spite of all these, employment and activity furnished by the first named mill has held the population, and the census just completed, showed a gain.

### Consolidated Adopts Daylight Saving

Office schedules of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., have been placed one hour ahead for the summer season. This gives the workers the same benefits as daylight saving, with an extra hour for recreation in the afternoon. The schedule will be in effect until October 1.

### Allan Waste Paper Plant Nearly Ready

Equipment is being installed in the new two-story building of the Allan Waste Paper Company, Menasha, Wis., and it is expected that operations will be started within a week or ten days. The company will do an extensive business in the handling of waste paper, and is equipped for assorting, bailing, and extensive storage.

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## S. L. Willson Back From Western Trip

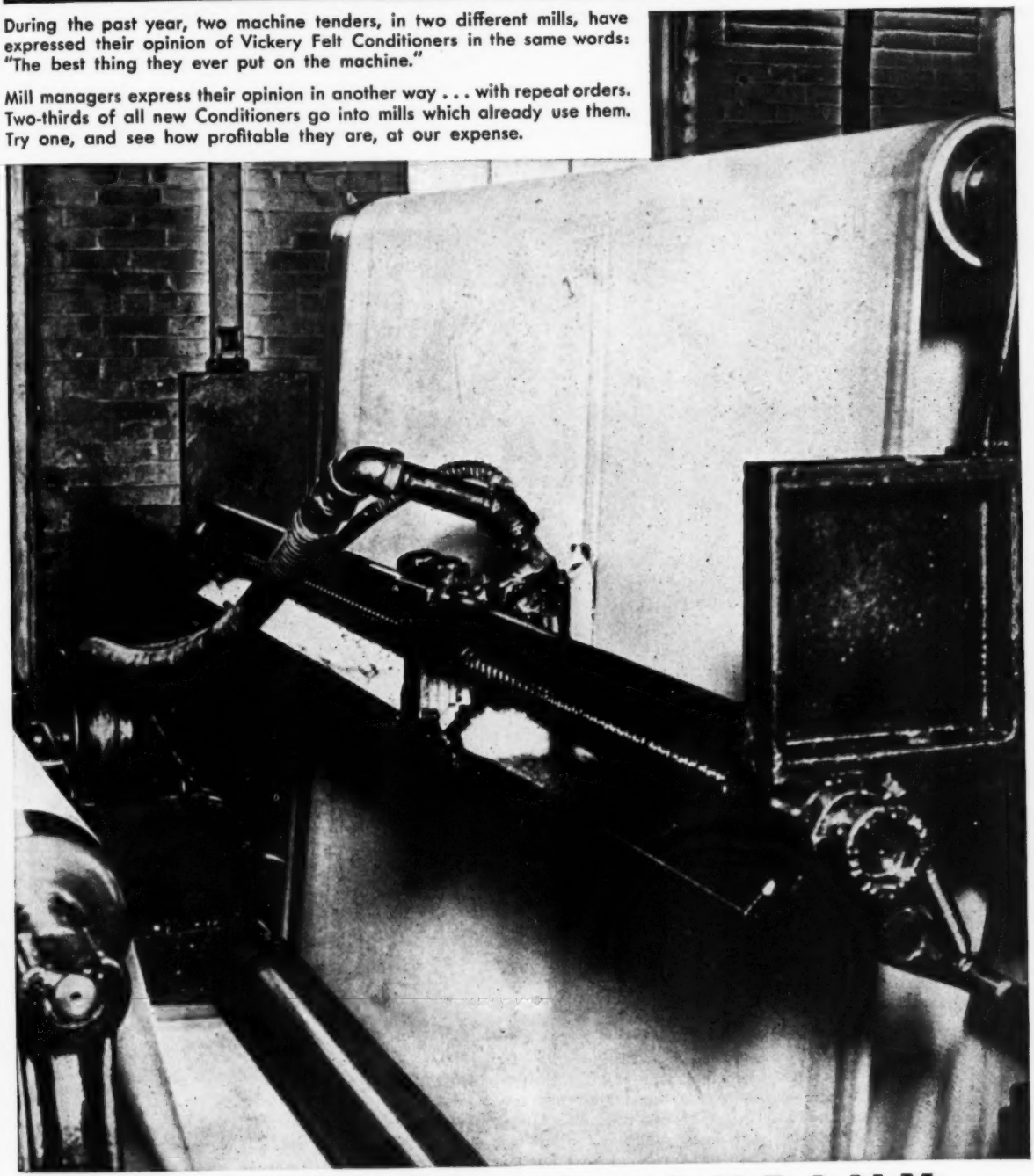
[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 17, 1930.—Sidney L. Willson, President of the American Writing Paper Company, Inc., returned Saturday from a six weeks business trip to the Pacific Coast. The journey out was by the southern route and back by the northern route. He found that business conditions were quiet all through the route of his trip, but that a spirit of hopefulness prevailed. He obtained the impression that an improvement in conditions would be shown by July 15 and that that improvement would be continuous. The crop conditions in the West are good. About every line of industry admits a falling off in sales but the concensus of business men and manufacturers was that by the middle of July improvement would be shown and continue until normal conditions were restored. He found that the paper industry was suffering with the rest and that western mills have in a number of cases been forced to curtail their production. Manufacturers were optimistic however and believed that the worst was over. The only line he noted that had not been as much affected was the automobile industry.

# "THE BEST THING THEY EVER PUT ON THE MACHINE" . . . . .

During the past year, two machine tenders, in two different mills, have expressed their opinion of Vickery Felt Conditioners in the same words: "The best thing they ever put on the machine."

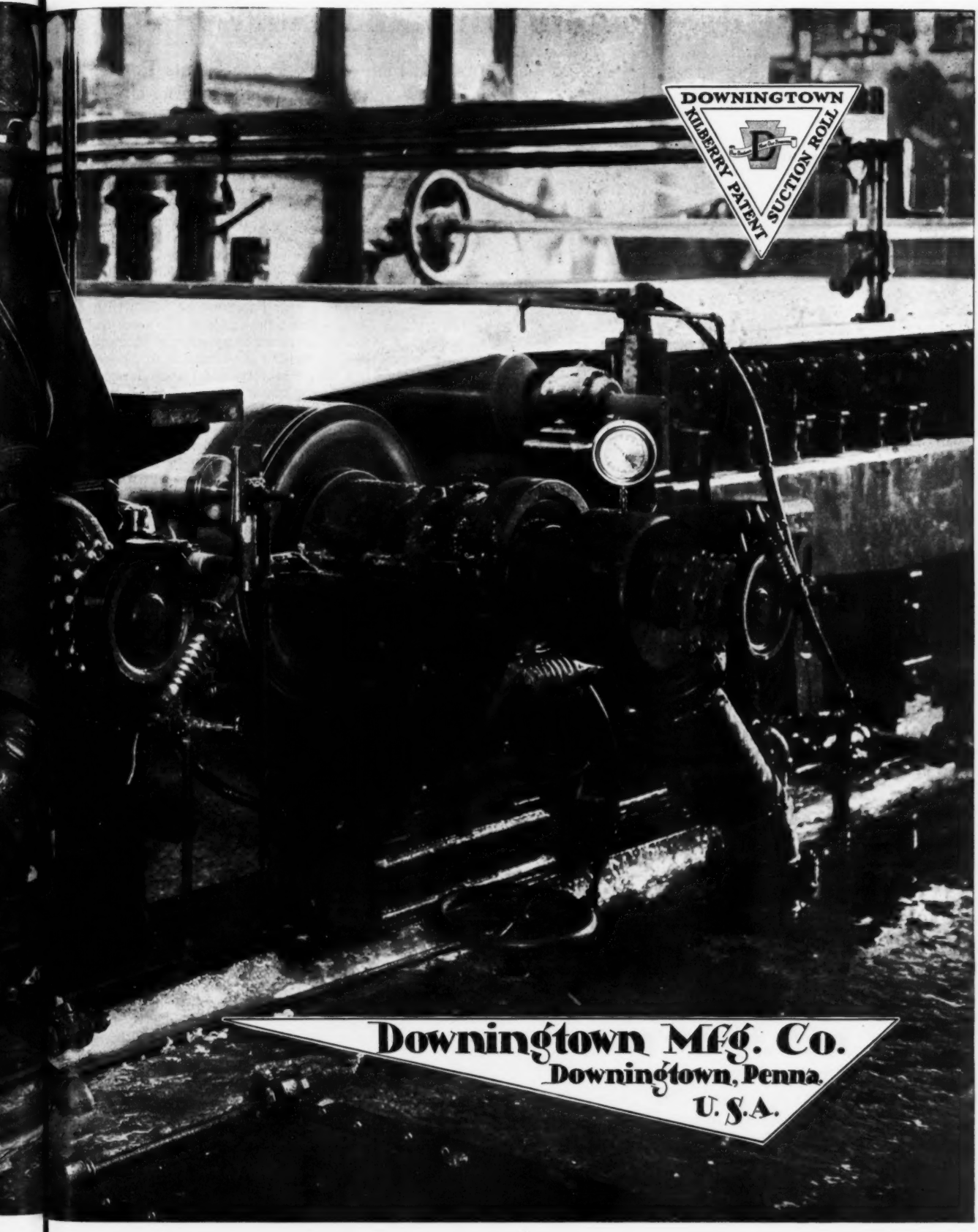
Mill managers express their opinion in another way . . . with repeat orders. Two-thirds of all new Conditioners go into mills which already use them. Try one, and see how profitable they are, at our expense.



**BIRD MACHINE COMPANY**
**SOUTH WALPOLE, MASSACHUSETTS**

4013

?
Are yours Old or New
Every paper machine, no matter how old, was once the latest thing and up-to-date in every respect. The passing of years affects the operation of the best of machinery, and due to changing conditions, it is often difficult to show a profit on their operation. • The installation of Downingtown Adjustable Suction Rolls may add enough extra tonnage or introduce sufficient economies in steam, felts and wires, to put these machines on a paying basis. The installation cost of the rolls would thus be repaid in a short time. • Let us tell you what other mills have accomplished by the installation of Downingtown Suction Rolls. Also, get our new 24 page catalog which fully describes these modern rolls.


DOWNINGTON
KILBERRY PATENT
SUCTION ROLL
Downingtown Mfg. Co.
Downingtown, Penna.
U.S.A.

# Ontario Mills Operate On Satisfactory Basis

## Fine Paper Manufacturers Are Fairly Active For Time of Year—Book Paper Plants Possess Orders Ahead for Approximately Three Weeks—Light Weight Paper Trade Keeping Up Remarkably Well—Paper Stock In Excellent Demand At Present

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 16, 1930.—While varying reports come from the paper wholesalers in Ontario as to the condition of trade it is not unusual to hear of a firm here and there which is doing really good business. One of Toronto's largest wholesale paper houses states that despite bad business conditions their trade so far this year has kept even step with that of last year and they have been selling just as much paper. A few other firms report a similar situation and say that they have only been able to keep sales up by hard digging through extensive advertising campaigns and reaching out into sources hitherto not tapped in the paper field. This policy has characterized the paper trade generally and it has brought results. There are some houses, of course, who declare that business is dull as compared with what it should be and that sales are light. Be this as it may the fact remains that the paper trade has not been hit nearly as hard by the recent business depression as some other commercial lines.

The trade may be said to be fairly prosperous, with sales keeping up rather better than was expected would be the case in the face of adverse trends of business generally and there is a disposition to view the future with a good deal of satisfaction. Fine papers are selling quite well and much better than the products of the coarse paper section which has been faced recently by some price reductions. Of course there is still the tendency on the part of the paper consumer to buy in small quantities but the bulk of this small order business is gradually mounting and by Fall wholesalers and consumers, it is felt, should be talking in terms of tons and car lots, as far as fine papers are concerned, at least.

There has been little change in paper manufacturing circles during the past week or so. Most branches of the industry are operating on a satisfactory basis with the mills generally experiencing no difficulty in disposing of their output. Fine paper mills are fairly busy and book paper plants, for the most part, have orders ahead for about three weeks. Most of the other fine paper plants are well up to their machines but enough business seems to be in sight to guarantee close to capacity operation. Coated paper plants, which were fairly busy earlier in the Spring are now a little less active but notwithstanding this there is a fair demand for the product. The light weight paper trade is keeping up remarkably well with satisfactory sales of all lines of tissues, toilets and specialties. There is no great volume of waxing papers, glassine and grease proof being sold but the manufacturers report a fair call for these classes of stock and predict really good business when general conditions return to normal. The paper converting trade shows very little improvement, both the manufacturing stationery and envelope houses reporting that they could handle a good deal more business than is passing now.

### An Interesting Pulp and Paper Action

Newton Edmeston, who was Mayor of Fort William, Ont., in 1922, was plaintiff in an interesting action which was heard before George A. Drew, Master in Chambers at Osgoode Hall, Toronto, a few days ago. Mr. Edmeston claims that while he was Mayor he was approached by the late Lieut.-Col. Thomas Gibson, president of the Fort William Pulp and Paper Company, now merged with the Abitibi company, to see if he could secure the Gull Lake timber limits. Plaintiff says that he was promised $5,000 and got $1,000 on account. He says that some time before 1928 he secured the desired limits from the Ontario Government for the Fort William Paper Company. Defendants denied there was any agreement to pay $5,000 and, furthermore, say that even if there has been any such agreement it was against public policy. The Master reserved his decision.

### Box Company Plans Expansion

At a special meeting of the directors of the Canadian Wirebound Boxes, Ltd., held in Toronto a few days ago, it was definitely decided that, in the near future, a new corrugated box plant will be erected in Toronto. It is believed that the site chosen will be on the property now owned by the company adjacent to the plant in operation on Gerrard street, near Paper avenue. As well as owning the plant on Gerrard street, the company also owns and operates another large factory on Notre Dame street in Montreal. As the Toronto plant has been working for some time to capacity, the company recently secured the property and factory formerly occupied by the Thompson-Norris Company. Through this acquisition, operations of the Toronto plants have been consolidated and the output increased.

A new plant is under construction in England and the company has indicated its intention to realize on its extensive rights and patents by expansion into Western Canada, although this will not be in the immediate future. The Orient, which uses more boxes than all the rest of the world, is also a prospective market. It is understood that earnings for the fiscal year ended April 30 will be shown at about the same level as in the previous twelve months. The first annual report of the concern as at April 30, 1929, showed net earnings of $243,231, compared with $222,516 in 1928, or the equivalent of $2.70 per share on the class "A" stock and after providing for dividends on this issue, the residue left for class "B" stock was $108,231, also equal to $2.70 per share. Of the class "A" stock the amount issued is 90,000 shares of no par value on which the prior dividend of $1.50 per share is provided. After $1 is paid on the "B" shares the two stocks participate equally. The annual meeting is to take place on July 8.

### Notes and Jottings of the Trade

John Sutherland, superintendent of the electrical works of the Abitibi Power and Paper Company mill at Sturgeon Falls, Ont., is in hospital suffering from a severe scalp wound. Attending a political meeting he slipped from the theater stage, and after his head had struck the railing around the orchestra pit, he fell unconscious to the floor. If no complications occur Mr. Sutherland will be able to leave the hospital in a few days.

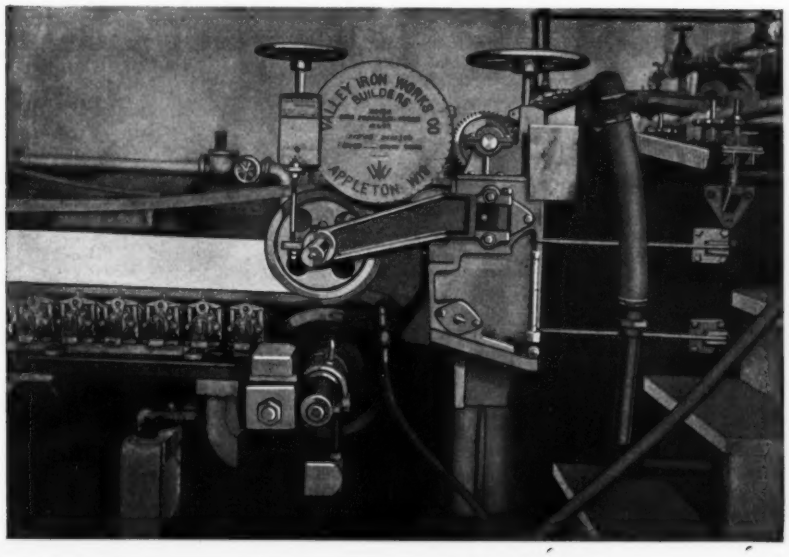
The Fred W. Halls Paper Company, Adelaide street west, Toronto, have added two new trucks to their delivery equipment.

J. R. Marshall, of the Canadian Nashua Paper Company, Peterboro, Ont., was a business visitor in Toronto recently.

A Dominion charter has been granted to Sherbrooke Machineries, Ltd. The new company, of which Arthur J. Connor is president and Claude L. Spafford is managing director, is a more completely Canadian organization than the old organization, and carries on the business of Sherbrooke Machinery Company, Ltd., which has been prominent in the pulp and paper industry since 1908. It is as old as the sulphate industry in Canada, which was started in the neighborhood of East Angus, Que. The company manufactures deckers, wet machines, coarse and fine screens, washers, knotters, etc.

Clarke & Stuart, Ltd., Seymour street, Vancouver, B. C., widely known stationers and well-known in wholesale paper circles throughout Canada, recently celebrated the thirty-sixth anniversary of the founding of the company with a dinner when the staff of the organization were the guests of the firm.

SLOW SPEED
HIGH SPEED




# THE WHOLE THING SIMMERS DOWN TO THIS:

**There are two basic factors in successful paper manufacturing —*quality* and *cost*.**

**Quality affects volume of sales. Cost affects margin of profit.**

**Since paper making is primarily a mechanical process—*machinery*, naturally, bears a burden of tremendous responsibility in any mill.**

**Therefore—the better the machinery, the greater the sales and profits.**

**Of all paper mill equipment there perhaps is no machine more vital than the Inlet. And of all Inlets there is none that has demonstrated its superiority more thoroughly than the Voith Inlet.**

**A new improvement which permits the running of heavy stock at slow speeds, as well as light stock at high speeds, makes the Voith Inlet an even more profitable installation than before.**

**Let us tell you why 140 mills have 286 Voith Inlet installations. Address the Valley Iron Works Company, Appleton, Wisconsin.**

# VALLEY

## Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Western Mfg. & Sales Div.: Smith & Valley Iron Works Co., Portland, Ore.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

# Philadelphia Paper Market Shows Firm Trend

## Price Situation Becoming Steadier, Despite Quiet Trading and Dwindled Demand—Most Manufacturers In Local Territory Are Operating On Short Time—Average Rate of Production Is From 70 to 80 Per Cent—Paper Stock Situation Easy

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 16, 1930.—Though quieter trading marked the week in the paper industry and demand dwindled considerably, there was a firmer trend to prices. Distributors do not anticipate livelier trading before the preparation for Fall sets in, but are optimistic and look ahead with confidence in the future. Manufacturers do not look for material improvement in business before midsummer and have arranged working schedules accordingly. Most of the mills in the local territory are on part time and keep production within the bounds created by the law of supply and demand. The average rate of production is from 70 to 80 per cent. A few plants catering to the needs of distributors handling seasonally active summer goods of sanitary character are running full.

Dragginess predominates in the paper stock market as the season advances and the mills cut production for the hot weather term. Prices of the commoner grades are subjected to pruning and are at rock bottom. Rags, too, have been subjected to price revisions downward with roofing stocks and the cheaper grades involved in adjustments to the needs of a dragging market. Mills show little interest in the cheaper grades of paper stock or rags but the better grades can be moved easier. There is a large stocking of the cheaper grades and some wholesalers are out of the market temporarily.

### Department of Commerce Compiles Local Statistics

An agent from the Department of Commerce is making a survey of the Philadelphia paper trade with a view to compiling statistics on the local paper market in conjunction with the census records. During the past week the survey of the Quaker City industry began and all the distributors, manufacturers and converters of paper products were given forms to be filled out regarding the source of their consumption and a questionnaire that gives information on the quantity consumed by utilities, oil concerns, various manufacturers, railroads, merchants, etc.

### Wholesale Paper Merchants to Hold Outing

Wholesalers of paper stocks and allied products in the waste industry will join in an annual outing to be held sometime in July according to tentative plans arranged at the meeting of the Wholesale Waste Merchants Association of Philadelphia held last Wednesday at the Lorraine Hotel. There were 38 firms present at the special session called for the purpose of arranging for the annual frolic. During the dinner President Thomas A. Kenny, of the International Trading Company, presided as toastmaster, while Secretary William J. McGarity, Jr., of the Penn Paper and Stock Company, reported on the quarterly business. The committee appointed to arrange for the outing at the meeting consists of the following members: Charles J. McNichol, of P. Di Santi Company; Max Cohen, head of the firm bearing his name and William J. McGarity, Jr.

### Paper Men to Memorialize Industry

Permanent Commemoration of the paper industry and the part played in the history of the nation from the early Colonial days when Benjamin Franklin laid the foundation for the graphic arts industry in America, to the present intricate and elaborate equipment of the paper mills of the country, will be effected through the erection of an exhibit which will be installed in the $5,000,000 memorial to be erected on the Parkway by the citizens of Philadelphia to the memory of Benjamin Franklin. It is sponsored by the Franklin Institute and the Poor Richard Club of this city, the fraternity of advertising men grouped in the organization, the Benjamin Franklin Memorial, Inc., with offices in the Franklin Trust Building, which last week called a meeting of the Paper Trade Association to arrange for recognition of the industry in the project at the Benjamin Franklin Hotel.

The entire paper group was present at the special session called on Monday of last week when a Paper Committee was appointed of the following: Norbert A. Considine, Paper House of Pennsylvania; Grellet Collins, Dill and Collins Paper Company; and George W. Ward, of the D. L. Ward Company. These members of the trade are to undertake the task of organizing the paper industry of the nation for a proper presentation of the paper makers art in the Franklin Memorial Building, which is to be one of the handsomest structures to be erected on the beautified Parkway leading from City Hall to the Fairmount Park entrance and in close proximity to the monument to Art which the municipality has erected for the Art Museum.

At the meeting it was disclosed that the place assigned to the paper memorial is on the second floor with exhibits of artificial silk and glass manufacture and the local committee protected the severance of this branch of the graphic arts from the elaborate and most prominent of all the industrial memorials to be installed in the Franklin Memorial that is to be featured on the main floor of the structure devoted to Graphic Arts history and achievements. The local committee is stressing the erection of the paper memorial in the same space with the Graphic Arts display and its efforts will be rewarded if the paper industry responds generously to the appeal of the paper representatives and will donate sufficient funds to promote a more elaborate and fitting monument.

### Paper Row to Abound Bridge Highway

Approval of the City Council of the plan to widen Randolph street into a great highway leading to the Delaware River Bridge which spans the river from Philadelphia to Camden, N. J., develops for the paper trade a leading artery of traffic which will give it prominence along the way and links it with the main communication between the State and the adjacent territory in New Jersey. The new highway will be known as Randolph Boulevard and is located between Fifth and Sixth street, the latter known as Paper Row. While present plans call for the widening of the upper portion from Vine street to Spring Garden street to a 100 foot span, the boulevard will eventually be continued from Vine street southward adjacent to the heart of the paper district and to an outlet of bridge traffic in South street.

### Scott Paper Co.'s Earnings Rise

In its reports of business for the period from January 1 to May 26, 1930, the Scott Paper Company, of Chester, Pa., states that its net income for the period amounted to $390,467, an increase of $94,678 over the corresponding period of last year. After payment of dividends on the preferred stock amounting to $65,834, there was a balance of $324,632 on the common stock, equivalent to $2.08 per share on the total of 155,998 shares of that class. In the same period of 1929 the earnings after dividends were equal to $1.52 per share on 150,000 shares of common stock then outstanding.

### American Mill Paper Co. Developments

The American Mill Paper Company, 2320 Wallace street, recently organized by a former trade associate long identified with the paper industry, James Jacquet, has developed a broader field for converted paper products and for sanitary products, doilies, tissues,

ASK THE

# G·T·M

THE WAY TO GREATER SAVINGS

**Wherever he goes the G.T.M.—Goodyear Technical Man—has a sharp eye for savings. Sometimes it is in materials. Sometimes in processes. Often he uncovers unsuspected losses in power transmission. He moves goods, liquids, air, and engine-power smoothly and without waste. In innumerable plants his skillful studies of operating conditions and accurate specification of Mechanical Rubber Goods to need, have led to new manufacturing profits. He knows manufacturing plants and their problems. He knows how and where to save.**

**In paper manufacturing the G.T.M. has an outstanding record. He knows your problems. For the closed-coupled, idler-equipped beater drives he has supplied the revolutionary Goodyear Compass Endless (Cord) Belt—*the nearly stretchless belt with a core of rugged cord.* He has applied Goodyear Emerald Cord Multiple V Belts to multiple drives on calenders, beaters, grinders and pumps. He has specified soft-nozzled Goodyear Sanitary Hose and Goodyear Conveyor Belting for movement of materials to the decided profit of your industry. He is an expert in your field. He can save money for you now.**

**For complete information on savings the G.T.M. can bring to your business, just write to Goodyear, Akron, Ohio, or Los Angeles, California.**

***The* GREATEST NAME IN RUBBER**

GOODYEAR

BELTS MOLDED GOODS HOSE PACKING

wax papers and bags and allied lines and for lace paper specialties. The firm, which opened its doors for business a few months ago, is giving special attention to requirements of hotels, institutions, clubs, cafes, restaurants and large consumers of its lines. It conducts its own converting services with menus, doilies, napkins and like lines, inscribed and imprinted with original designs and emblems of the firms for which its products are produced. Many of these are of high grade unique artistic creation. A large warehousing building has been acquired for its use at the address now occupied. Mr. Jacquet is well known to the trade as the former associate of the Aatell and Jones Company, long linked with the Philadelphia industry.

### Enterprise Paper Co.'s Service for Bakers

A specialized service in the paper supply accessories of the bread and cake baking industries is conducted by the Enterprise Paper Company, 3rd street and Callowhill. The firm has developed a department whose heads have made research of the requirements of the bakers and has stocked it with all supplies needed for conduct of such business. These stocks include parchments for the baking industry, waxed and glassine papers and bags, wraps, pie plates, baking cups, pan liners, cellophane coverings and wraps in bags and imprinted with firm's own name and emblems and a full assortment of such supplies making it complete in its services.

### Blast-Fire Imperils Asbestos Plant

Fire which was caused by the blasting of one of the buildings storing gasoline used by the United States Asbestos Company, at Mannheim, near Lancaster, Pa., threatened the entire plant of the company, occupying a ten acre site, and with a series of structures devoted to the manufacture of asbestos products. The explosion which caused the blasting of the building used for the gasoline store house sent flames high into the air and was caused by the seeping of gasoline from a leaking can outside the building into the adjacent creek and was ignited by burning tobacco. The flames back trailed over the stream for 300 feet of open space and into the gasoline storage building. The watchman, who saw the fire approaching the building, and ran to the door, was hurled to the ground as he neared the portal by the time that the flames reached the tanks in storage, and was seriously injured.

## New German Paper Directory Issued

The Guntter-Staib Verlag, of Riberach-Riss, Wurtemburg, Germany, has just published the twenty-third edition of Address-buch der Papier-Pappen-Holzstoff-Zellstoff und Strohstoff-Fabriken, a directory of paper, pulp, pulpwood, cellulose and straw pulp manufacturers in Germany, Denmark, Alsace-Lorraine, Holland, Austria, Poland, Switzerland, Czechoslovakia and Hungary. Also procurable with the directory is an accompanying map showing the different manufacturing centers.

This edition of the directory also contains a list of book, colored and parchment paper manufacturers, water-proof, waxed, paraffine, wall paper, and a list of the best known water-marks of German paper manufacturers. It was edited under the supervision of the firm and includes a special leading article by M. V. Wussow, business manager of the German Paper Manufacturers Association.

Because of the necessity for careful investigation, the 23rd edition has been a long time in preparation. This was made necessary on account of the great amount of detail work required and the assemblage of data. The classification and listing of the various grades and the cataloging of dealers was newly taken up with the paper organizations and also was considerably enlarged. In its present form it is practically correct and complete.

The directory, which is exceptionally well printed, sells for 10.50 marks. The map that goes with the book has been kept separate for special ordering as it will not be newly revised and issued with each edition. A small special edition on very thin paper has also been published for the use of travellers.

## Blake, Moffit & Towne in New Building

With a 35 per cent increase in floor space and fully equipped with modern facilities for handling the large stocks of paper, paper products and twines which are carried, the Oakland Division of Blake, Moffitt & Towne just announced the accupancy of its new building located at Sixth and Webster streets.

Substantially built of reinforced concrete, the new structure stands as a distinct addition to Oakland's wholesale district and as a model in paper warehouse design. The plant consists of two floors providing 20,000 square feet of floor space and is said to have cost in the neighborhood of $75,000. The property is on the Southwest corner, extending for 135 feet along Webster street and on Sixth street for 75 feet.

Specially selected brick in a warm tan shade forms an attractive finish for the Building. The main entrance is on Sixth street leading into offices consisting of a large salesroom, executive offices and display room, where provision has been made for exhibiting finely printed specimens on papers stocked by the company.

The warehouse portion of the building takes up the remainder of the main floor and all of the second floor. A wide entrance leading in from the Webster street side permits trucks to run in and load up at the delivery platform. Special attention has been given to the installation of every modern convenience for the rapid and careful handling of paper stocks.

Since its establishment several years ago the Oakland Division of Blake, Moffitt & Towne has been under the management of F. L. Unthank who has had a long connection with the organization. He was formerly an executive in the Fine Paper Department and later sales manager of the Coarse Paper Department of the San Francisco Division.

In commenting on the new quarters Mr. Unthank stated, "It is a source of gratification to us to be able to make this move into our new building on the occasion of our organization's 75th anniversary. Established in San Francisco in 1855, Blake, Moffitt & Towne for all these years have enjoyed the confidence and good will of business people throughout the Pacific Coast. Our Oakland Division has shared in the growth of the East Bay necessitating a move to larger quarters. With the opening of the new building comes the assurance of even closer relations with the trade and an opportunity to better care for the increasing needs of the paper buyers of this aera.

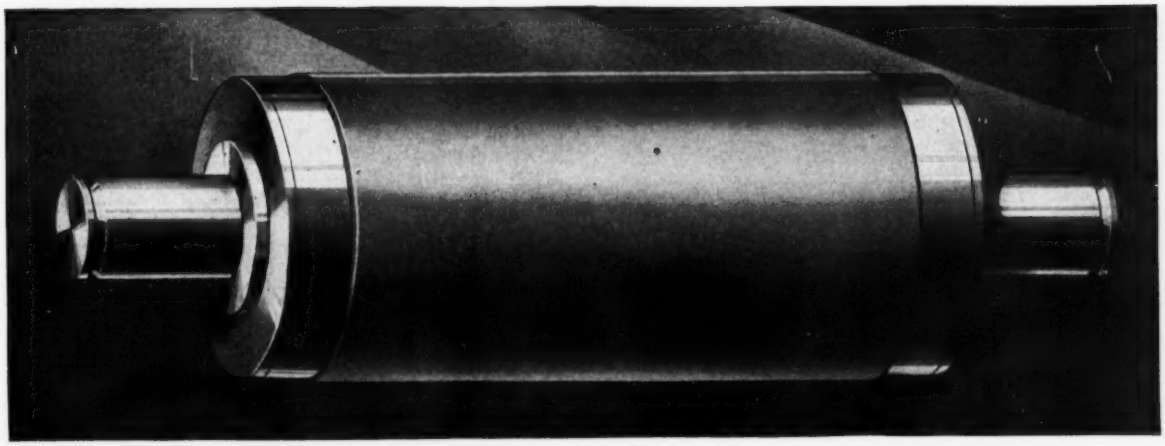
"While we have planned no formal opening for our new building, friends and customers are taking advantage of our invitation to drop in and inspect the plant."

In addition to Oakland and San Francisco, Blake, Moffitt & Towne have divisions located at Los Angeles, Seattle, Portland, Boise, Salem, Medford, Tucson and Phoenix, constituting one Tacoma, Sacramento, San Jose, Fresno, San Diego, Long Beach, of the largest and most important paper distributing chains in the country.

## Trade Practice Procedure Changed

The Federal Trade Commission has just changed its procedure in connection with trade practice conference, it is learned. No official statement has been made on the change.

Up to the present time after a trade practice conference has been held the resulting rules are laid before the Commission for its action. This means that they are slashed and stricken out wherever the Commission wants to make changes and they are then promulgated. Under the new procedure, just adopted, after the Commission has done this slashing it sends the new rules confidentially to the trade and gives it thirty days in which to make suggestions if it desires, at the end of which time the rules are promulgated. This means that the industry affected has a much better chance for fair play than it has had and the new method is a vast improvement over the old. The new procedure is effective at once.



# Perkins Calender Rolls

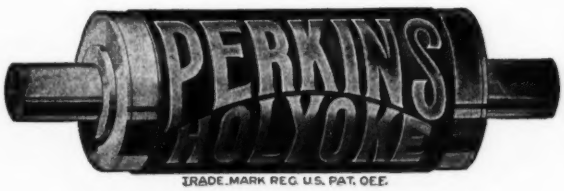
When you specify Perkins Calender Rolls you not only receive rolls built exactly to your specifications—the rolls contain a priceless ingredient—long experience.

*No* CALENDER *can be better than the* ROLLS *in it*

Perkins Roll business is the largest in the world and the fact that the Perkins Roll shop is also the largest in the world indicates the preference Perkins Rolls receive throughout the paper industry. This longest and broadest experience means high finishing qualities.

Perkins builds Calender Rolls—Cotton, Paper, Embossing, Chilled Iron—to meet exactly your production requirements.

## B. F. Perkins & Son, Inc., Holyoke, Mass.

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| | | |
|---|---|---|
| Cotton Rolls | Web | Mullen Paper |
| Paper Rolls | Supercalenders | Testers |
| Embossing Rolls | Friction | Tensile Testers |
| Chilled Iron Rolls | Calenders | Ventilating Fans |
| Granite Press | Embossing | Rag Cutters |
| Rolls | Calenders | Stock Cutters |
| Glassine | Sheet Calenders | Paper Dampeners |
| Supercalenders | Platers | Bleach Ejectors |

# Paperboard Industries Association Meets

Meetings of the Paperboard Industries Association were held at the Drake Hotel, Chicago, May 20, 21 and 22. Meetings of the Standing and Executive Committees were held on May 20; the Paperboard, Folding Box and Container Groups met in separate sessions on Wednesday, May 21, and the General Meeting of the Association, including the Trade Practice Division, attended by manufacturers of Paperboard, Containers and Folding Boxes, was held on the 22nd. Sessions were well attended.

Luncheon was served to all members at noon Wednesday, May 21.

### Paperboard Group Meeting

Members of the Paperboard Group met Wednesday morning, May 21, Vice-President Henry D. Schmidt presiding.

Vice-President Schmidt submitted a comprehensive report, in which he referred to conditions in the paperboard industry, mill activity, standards, etc.

### Tariff Legislation

Vice-President Schmidt reported in detail as to the status of pending tariff legislation and its effect upon the paperboard industry. He submitted to the membership, paragraphs of the pending act as passed by the Conference Committee of the Senate and House in the form recommended by the Association.

### Membership Committee's Report

Chairman J. P. Brunt reported for the Membership Committee, stating that applications for membership had been secured from two prominent paperboard manufacturers in the northwest, and that the Committee expected to continue its efforts to increase the membership.

Among other subjects reported upon and discussed were the following: Cost Manual prepared for the Paperboard Industry, standardization of micrometers, etc., statistical charts and summaries.

### Round Table Discussion

There was a round table discussion regarding Capital, Labor, Raw Materials and Transportation. Vice-President Schmidt called upon the individual members and they reviewed the situation as it existed in their respective localities.

It is expected that this round table discussion will be continued at future meetings.

### Folding Box Group Meeting

The Folding Box Group meeting was held Wednesday afternoon, May 21, A. C. Osborn, Group Vice-President presiding.

Among the important subjects reported upon and discussed were the following:

1. The Reporting of Transactions; 2. Cost Questionnaire; 3. Operating Comparisons 1929-1930; 4. Folding Box Group Charts; 5. Extending the Use of Folding Boxes.

### Uniform Sequence for Stating Dimensions

The above subject was reported upon at the urgent request of several members who had stressed the desirability of having the three dimensions of a folding box stated according to a uniform sequence, which might be adopted by the folding box industry and its customers.

After consideration of this subject at the Folding Box Group meeting the following bulletin has been issued, and it is urged that the recommendations of the Folding Box Group be adopted by all manufacturers and users of folding boxes.

At meeting of the Folding Box Group, Paperboard Industries Association, held at the Drake Hotel, Chicago, May 21, 1930, the following report was submitted covering the answers to a questionnaire mailed to the industry:

"In response to questionnaire dated April 16, 1930, replies were received from 48 manufacturers of folding boxes, including certain non-members to whom the questionnaire had been sent.

The following is a summary of the replies:

Note: A—Denotes the longer dimension at the opening.
B—Denotes the shorter dimension at the opening.
C—Denotes the third (remaining) dimension.

| No. of Manufacturers | Sequence in which Dimensions Stated |
|---|---|
| 27 | A-B-C |
| 16 | C-A-B |
| 3 | B-A-C |
| 2 | A-C-B" |

After due consideration, the Folding Box Group of the Paperboard Industries Association unanimously adopted the following Resolution; namely:

"Resolved, that the Folding Box Group of the Paperboard Industries Association recommends that for the sake of simplification and standardization, the three dimensions of a folding box be stated in exactly the following sequence; namely:

1st—*The longer dimension at opening.*
2nd—*The shorter dimension at opening.*
3rd—*The third (remaining) dimension.*"

It so happens that the Division of Simplified Practice, U. S. Department of Commerce, in its efforts to standardize the Coffee Carton, has stated the dimensions in the above sequence, and it is urged that the foregoing be adopted by all manufacturers and users of folding boxes.

### Container Group Meeting

The Container Group Meeting was held Wednesday afternoon, May 21, with J. H. Macleod, Group Vice-President presiding.

### Address By W. H. Smith

The meeting was addressed by W. H. Smith, Chief Inspector, Western Weighing & Inspection Bureau, who made a most interesting and constructive talk upon the subject of "Fibre Boxes in Freight Service." Mr. Smith is an authority on containers of all kinds and he gave the results of actual experience with fibre boxes and other types of containers and also explained how the container manufacturer may improve, not only the quality of his product, but also the service rendered to the customer. He emphasized quite forcibly the fact that the carriers are encountering entirely too much damage on certain specific articles and he stressed the fact that the shipper and the box manufacturer have a direct responsibility in seeing that only such boxes are used for the shipment of these specified commodities as will protect the goods from damage. He strongly urged that the greatest care be exercised to see that boxes are of the ideal size, also that sufficient inner packing is used, and that boxes are sealed in accordance with the carriers' specifications.

An interesting discussion followed Mr. Smith's remarks, all of which has been reproduced in the minutes of the meeting.

### Sales Promotion Committee's Report

A. W. Luhrs, Sales Promotion Representative, reviewed eight different fields into which the use of paperboard boxes has been introduced and extended.

In the supplying of boxes in these new fields, Vice-President Macleod urged that members be careful to supply only such boxes as fully comply with the specifications recommended by the Sales Promotion Force.

### General Manager's Report

General Manager Browder submitted a comprehensive report of subjects of interest to the Container Croup, a copy of which was included in the minutes of the meeting.

Among the items reported upon in detail were the following:

# The DRAMATIC DEMONSTRATION

## Is Usually Convincing Until We Consider The Conditions

**From the simple product of the vendor, to the scientific ventilating system for a mill—this fact holds equally true. Results secured from a ventilating system under one set of unusually favorable circumstances are likely impossible of attainment in hundreds of other mills where less favorable conditions necessarily prevail. Performance figures by themselves mean little without considering such factors as mill construction, wet end conditions, size of machine, continuity of operation, etc. No single dramatic demonstration can hope to create a new vogue in ventilating.**

* * * * * *

**The successful record of ROSS SYSTEMS for mill ventilating extends over a decade, tried and tested in all types of mills under almost every combination of operating conditions. You can compare Ross Systems results in mills similar to your own. No other method affords such comparison.**

## J. O. ROSS ENGINEERING CORPORATION

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Main Office—122 E. 42nd Street
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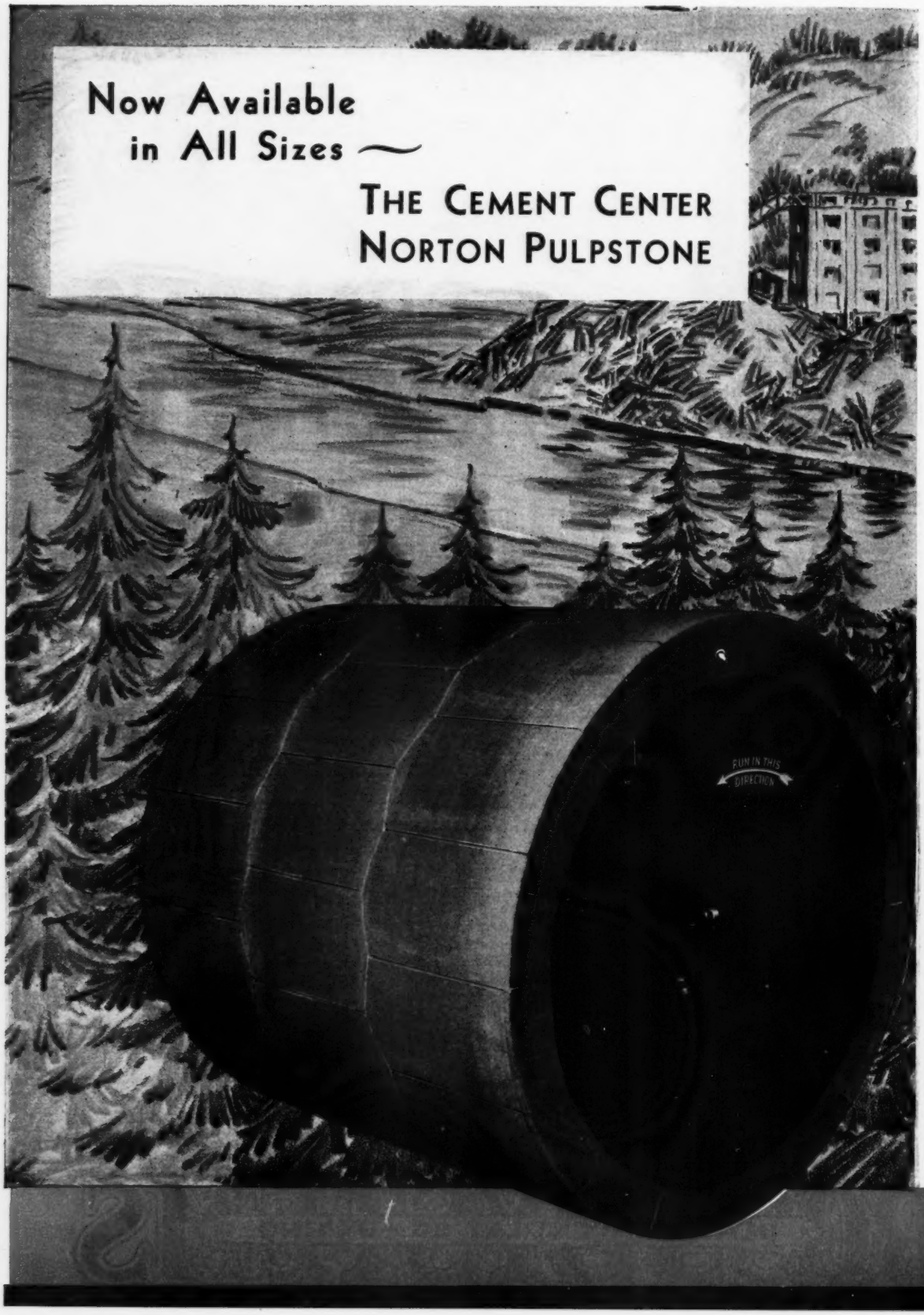
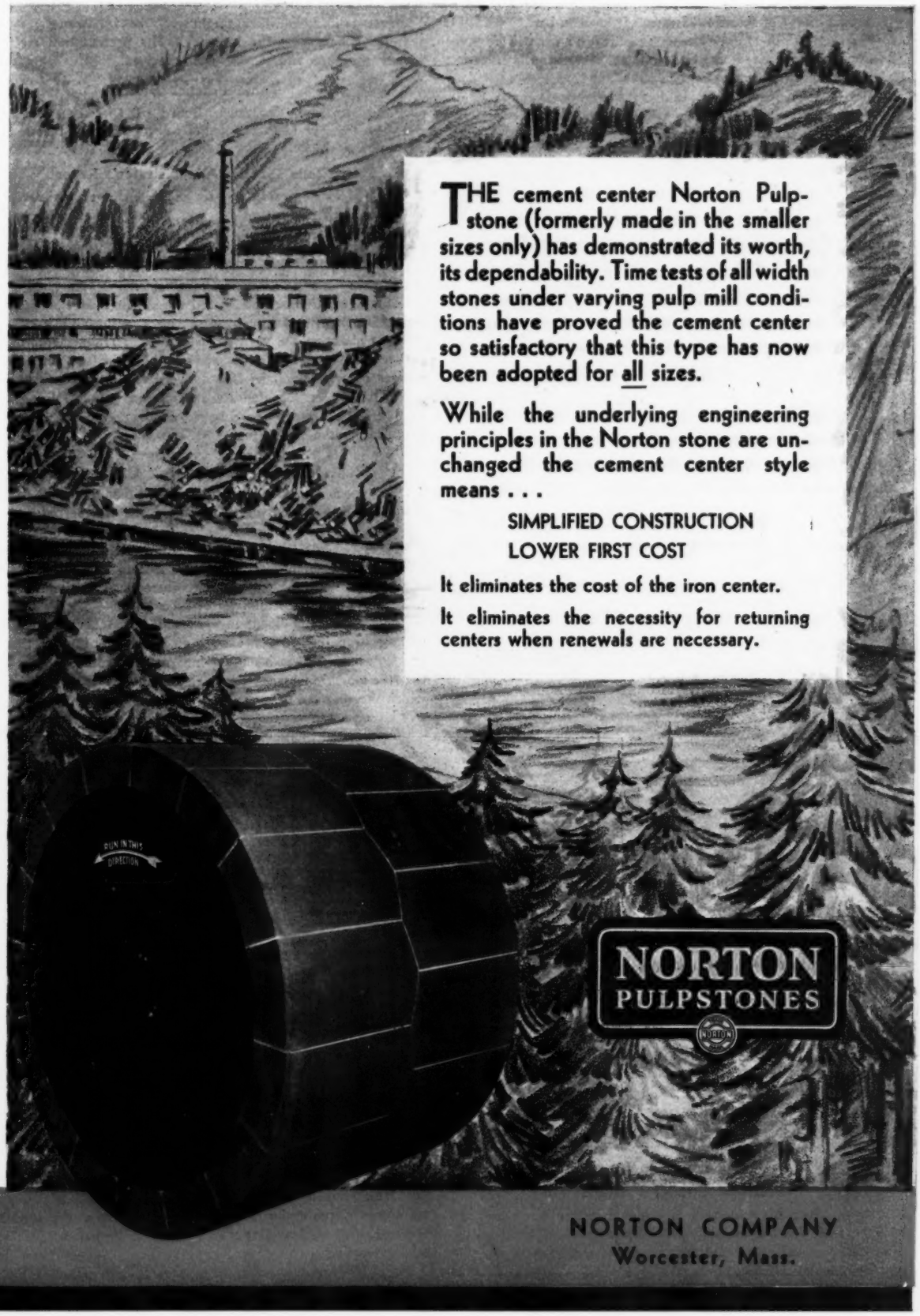
**ROSS ENGINEERING OF CANADA, LIMITED**
NEW BIRKS BLDG., MONTREAL

**ROSS SYSTEMS**
HEATING—VENTILATING—DRYING


Now Available
in All Sizes
THE CEMENT CENTER
NORTON PULPSTONE
RUN IN THIS
DIRECTION




THE cement center Norton Pulpstone (formerly made in the smaller sizes only) has demonstrated its worth, its dependability. Time tests of all width stones under varying pulp mill conditions have proved the cement center so satisfactory that this type has now been adopted for all sizes.

While the underlying engineering principles in the Norton stone are unchanged the cement center style means . . .

SIMPLIFIED CONSTRUCTION

LOWER FIRST COST

It eliminates the cost of the iron center.

It eliminates the necessity for returning centers when renewals are necessary.

NORTON COMPANY
Worcester, Mass.

1. Traffic and Classification Subjects considered at April 1930 Hearings of the Consolidated Classification Committee.
2. Changes Contained in Consolidated Freight Classification No. 6, effective June 15, 1930.
3. Detailed Comparison of Railway Freight Claims paid in 1929 with previous years.

Among other subjects discussed at the meeting were the following:

1. Corrugated Box Specifications.
2. Container Group Charts and Summaries.

### General Meeting of All Groups

The General Meeting was held Thursday, May 22, with President Hugh Strange presiding.

### Executive Committee's Report

President Strange submitted the report of the Executive Committee covering recommendations and action taken by the Committee at a meeting held in Chicago, May 20, 1930.

Among the subjects reported upon were the following:

1. Finances, including Treasurer's Report and Budget Comparison.
2. Dues Basis and Budget for Last Half of Year.
3. Companies recommended for Election to Membership.

### Three Companies Elected to Membership

The following companies were unanimously elected to membership in the Groups mentioned below, namely:

Indiana Fibre Products Company, Container, Marion, Indiana.

B. F. Nelson Manufacturing Company, Paperboard and Container, Minneapolis, Minn.

Waldorf Paper Products Company, Paperboard, Container and Folding Box, St. Paul, Minn.

### Personnel of Standing Committees

President Strange announced the following appointments:

Sales Promotion Committee:

J. M. Arndt, of Robert Gaylord, Inc., St. Louis, Mo., appointed Chairman.

Standardization Committee:

C. G. Maher, of Waldorf Paper Products Co., St. Paul, Minn., and K. W. Schneider, of American Coating Mills, Elkhart, Ind., appointed members of the Committee.

Statistical-Accounting Committee:

Paul A. Schilling, of Waldorf Paper Products Co., St. Paul, Minn., appointed a member of the Committee.

### Sales Promotion Committee's Report and Exhibit

The Sales Promotion Committee's report was received with interest. This presentation was supplemented by an exhibit of 17 separate food products packaged in folding boxes and shipped in fibre containers, all of which represents business not heretofore available to the manufacturers of paperboard, containers and folding boxes. Full details regarding these new packages have been furnished to member companies.

### Report of J. J. Brossard

J. J. Brossard, who had attended the Annual Meeting of the Chamber of the U. S. A., as the National Councillor and official representative of the Association, reported upon his attendance at that meeting.

### General Manager's Report

General Manager Browder submitted an interesting report in which he reviewed the principal activities of the past sixty days.

### President Strange's Report

President Strange submitted a most constructive report in which he reviewed the situation that has existed in the industry. Particular emphasis was laid upon operating efficiency and the necessity for an intelligent sales policy. He also reviewed in detail the service rendered by the Association and outlined a business procedure which might well be followed by every individual company in the industry. His presentation met with a hearty response and it was well received.

### Trade Practice Division

Sidney Froham, Chairman, Board of Directors, Trade Practice Division, presided during the consideration of the trade practice subjects.

### Trade Practice Administrator's Report

I. W. McLean, Administrator, submitted a report covering his activities during the past 60 days, a copy of which report was attached to the minutes of the meeting.

### Remarks of Gilbert H. Montague, Counsel

Following his introduction by Chairman Froham, Mr. Gilbert H. Montague, Counsel, addressed the meeting. Mr. Montague suggested a plan whereby improvement along sound lines may be brought about in the various localities. Arrangements are being made for Zone or Group meetings to be held at an early date, notices of which will be issued to all eligible manufacturers.

Following Mr. Montague's remarks, a general discussion ensued and he answered a number of questions which were propounded by the membership.

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## Restricting Pulp Export Causes Furore

It is expected that the pressure of public opinion will compel the Nova Scotia Government to withdraw the Bill introduced in the Legislature by Premier Rhodes, for restricting the exportation of Nova Scotia pulpwood by American interests. The bill, according to a despatch from Halifax, N. S., caused a furore such as has not been aroused by any measure introduced in the Nova Scotia Legislature in the last quarter of a century.

The bill, an amendment to the Land Tax Act, would restrict the cutting of pulpwood for export on holdings of more than 1,000 acres. So great has been the indignation aroused by its content that the Government has been obliged to stage a public hearing, at which meeting the measure was vigorously assailed by representative citizens.

Col. Thomas Cantley, member of Parliament for Pictou County and a strong supporter of the Rhodes Government, led the ranks of insurgents from within the party. Denouncing the bill as a most iniquitous measure and an outrageous infringement of private property rights, Colonel Cantley said "it confiscates property, call it by any name you like, and the people will not stand for it."

Hector McInnes, representing the Hollingsworth & Whitney interests, said his clients had paid $4,000,000 for their property and spent about $500,000 yearly on the land. Their attitude, he said, was to conserve their property and they would favor any measure of conservation.

"This bill has been a surprise," Mr. McInnes said, "not only to Hollingsworth & Whitney, but also to the Sonora Lumber Company and to every small owner in the Province. Operators in this Province rely on the banks for their financing. With this bill on the statute books the banks would not advance one dollar."

Numerous other speakers advanced similar arguments contending that the proposed legislation would paralyze the pulp wood industry.

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## B. F. Perkins Heads Circus Fans Association

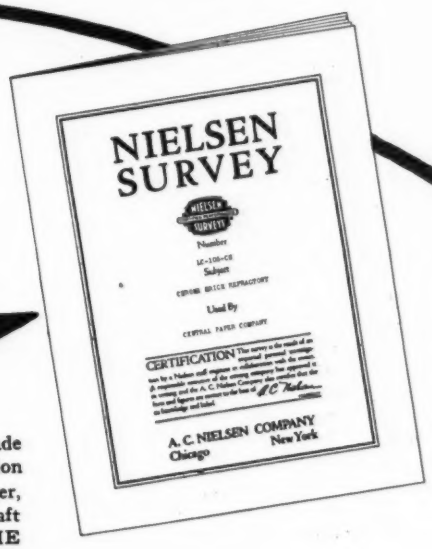
[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 16, 1930.—Benjamin F. Perkins, President of the American Tissue Mills, Inc. has been elected chairman of the Massachusetts Top, Circus Fans Association. Mr. Perkins is an ardent circus enthusiast and last November at the annual sales convention of his traveling men a circus performance was a feature of the evening.

A. J. Heirmonson formerly of the Chicago office of the Company has been promoted to be general sales manager of the concern.

# Central Paper Co. *"saves"* $835.68 per year, by using LAVINO CHROME BRICK for their KRAFT SMELTER FURNACE LININGS

—and this NIELSEN SURVEY *tells how*




**While many Kraft Mill operators know that high grade Chrome Brick Furnace Linings are not affected by the action of various smelting sodium salts,—and therefore last longer, and are more satisfactory,—probably few realize that Kraft Smelter Furnaces LINED WITH LAVINO CHROME BRICK will give from 20 TO 25% LONGER SERVICE LIFE. Even when the higher cost of Chrome Brick was considered (in comparison with Soap Stone) the Central Paper Company, of Muskegon, Michigan found the ACTUAL SAVING PER FURNACE PER YEAR TO BE $278.56—this is all carefully explained and figured in Nielsen Survey No. LC-105-CK,—send for a copy and be convinced.**

**Even if you are using Soap Stone Smelter Furnace Linings, you'll find it will pay you to use KROMEPATCH (The Multi-Bond Chrome Cement) for the joints,—and Plastic K-N (Plastic Chrome Ore Refractory) for all "patching jobs."**

**Literature and details sent upon request.**

E. J. LAVINO AND COMPANY
REFRACTORIES DIVISION
CHROME, MAGNESITE AND SILICA REFRACTORIES
BULLITT BUILDING PHILADELPHIA

*"Pioneers in Chrome Refractories"*

**E. J. Lavino and Company, Bullitt Bldg., Philadelphia, Pa.**

☐ Send me a copy of Survey No. LC-105-CK regarding Chrome Brick for Kraft Smelter Linings.
☐ Send me Literature regarding KROMEPATCH—The Multi-Bond Chrome Refractory Cement,—and Plastic K-N (Plastic Chrome Ore).

Mr. ..... Title .....

Firm .....

Address .....

P.T.J.-6-30

# Boston Paper Trade Has Annual Outing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., June 16, 1930.—At a sales meeting of the Carter Rice & Co. Corp., held at the Boston office last Saturday Earl Ives of the Scott Paper Company discussed the possibilities of the Scott products. He stressed particularly that June 21-28 would be a National Scott Paper Week and requested that each Carter Rice salesman do his best to secure at least one new account for Scott tissues. Tying up with this national campaign, the Scott Paper Company are planning to have their advertisements appear in all the women's magazines. The campaign will also be supplemented by 120 displays in Boston windows.

Rutter & McNaught, Inc., have taken on the exclusive New England agency for Booklovers Papers, Handpressed Text, Cover and Card, made in white by the Advertisers Paper Mills, Holyoke, Mass.

The office and warehouse of the Driscoll Paper Company, recently incorporated in Massachusetts, is at 122 West First street, South Boston. Morris F. Driscoll, head of the concern, was recently with D. De Stefane Company. Besides handling waste paper, the company, it is understood, will deal in mill seconds in fibre and corrugated shipping containers, boxes, etc., and used boxes in condition for service again.

Andrew Muirhead, superintendent of the Robert Gair Company with headquarters in New York City, is at Dr. Benson's Hospital, Haverhill, Mass., for an operation. Mr. Muirhead was taken suddenly ill at his residence in Bradford, Mass., June 8.

Franklin F. Spaulding, president of the Spaulding & Tewksbury Company, box board dealers, returned from a week at Philadelphia on the Fairfax on the last trip previous to the disaster.

William L. Bigley, formerly salesman for the Casey-Bigley Company, has taken a similar position with the Howard Paper Company. He is the son of William J. Bigley, previously with the Casey-Bigley Company, who recently went to the Howard Paper Company

William C. Mudge, formerly purchasing agent for Case, Lockhart & Brainerd, a Hartford, Conn., concern, has joined the sales force of the Arnold-Roberts Company. Mr. Mudge, who is a practical printer, will cover the Hartford territory and have an office in that city.

John R. Diggs, vice-president of the Albemarle Paper Manufacturing Company, Richmond, Va., was in New England and at the Boston office of the company last week.

Charles H. Wood, president of E. Butterworth & Co., Inc., attended a dinner of the Senior Golfers at the Woodland Country Club last Tuesday, going there from the outing of the Boston Paper Trade Association.

Frank Sharples, manager of sales for the United Paperboard Company, Wabash Coating Mills Division, was at the Boston agency last week.

The South Bay Paper Stock Company, 164 A street, South Boston, is removing to Atkinson street. In the new location the company will have as much space for packing waste paper and possibly more than previously. They will also have a new railroad siding. Joseph Lucca is manager.

### Officers of the Association

Officers of the association are Albert R. Smith, president; Charles A. Esty, 1st vice president; Frank B. Cummings, 2d vice president; Thomas H. Casey, treasurer; F. Bendel Tracy, secretary.

### Outing

Among those present were:

Albert R. Smith, Donald R. Smith, Hubert L. Carter, J. G. Swift, J. G. Swift, Jr., J. L. Stille, L. J. Vanderberg, F. C. Keep, R. C. Sheldon, Charles H. Wood, Horace B. Sargent, F. C. Burkhardt, Charles F. Munroe, Herbert J. Casey, George N. Ernest, Jessup & Moore Paper Co., W. Gardner Very, F. W. Main, W. J. Tower, E. E. Pope, W. J. McLellan, Thomas Compton Walsh, Thomas Compton Walsh, Jr., R. F. O'Neil, Nelson Feeley, Lionel A. Walden, Royal P. Teele, W. B. Sheehan, Missisquoi, E. R. Lyman, C. F. Jameson, J. B. Ramage, John H. Brewer, C. H. Coley, Paul D. Caskey, C. M. Cutler, H. C. Thayer, John B. Van Horn, M. A. Park, P. D. Poinier, J. L. Munro, C. Frederic Wellington, John A. Andrew, Harold C. Upham, John E. A. Hussey, Col. Charles S. Proctor, Albert P. Carter, L. E. Maglathlin, Charles R. Bell, John W. Vivian, R. B. Rising, Arthur C. Hall, E. B. Dik, R. A. Wight, Norman Harrower, Walter M. Pratt, H. A. Allen, A. A. Tanyane, H. C. Ham, Blair B. Stringfellow, H. G. Lindenberg, Howard E. Chase, Walter P. Simends, Harry P. Woodward, W. E. Hewitt, E. F. Ross, Arthur E. Ham, Wm. A. Merrill, H. F. Bigelow, Graham Blandy, 2d, Harold R. Hopkins, Geo. L. Webb, E. L. Cummings, Frank B. Cummings, E. L. Wood, F. B. Korbel, R. F. Chapin, N. J. Patterson, R. B. Taft, N. S. Clark, R. Humes, F. O. Johnson, F. H. Blackman, Frank H. Merrill, J. L. Ham, Dr. R. L. Rice, K. H. Ways, A. P. Mitchell, E. D. Bement, T. H. Casey, Wm. H. Hilton, H. W. Gordon, C. W. Gordon, C. W. Nelson, E. P. Hay, W. D. Thompson, C. H. Esty, Robt. M. Stone, C. W. Wood, and John F. Blackman.

## Quebec Forestry Convention

The annual Quebec Forestry Convention of the Canadian Forestry Association opened in Quebec on Thursday last and proved highly successful. Ellwood Wilson, president of the association, opened the Convention, and other leading speakers included the Hon. G. Carroll (Lieutenant-Governor of the Province), the Hon. J. E. Perreault, (Minister of Highways and Mines, representing Premier Taschereau), Colonel Price (president of Price Bros. & Co,), J. G. Wright (of the Dominion Forest Service), and Henri Kiefer (chief of the Forest Protection Service.

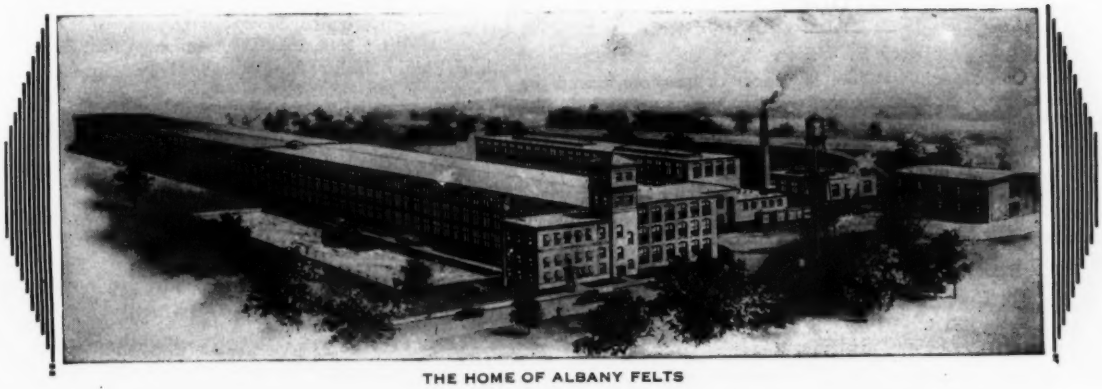
Colonel Price strongly advocated an extension and improvement of the present limited system of weather forecasting which warns the forest protective forces of approaching periods of safe or dangerous humidity. He also firmly urged a better and more highly trained personnel in the forest ranging work, more and better fire fighting equipment, more roads through the forests to allow rapid transportation, better telephonic communication, radio for the less accessible areas, and possibly a mobile squad to travel by airplane.

"I suggest that forest protection should be kept outside the realm of party politics away from political patronage," added the speaker. He came out vigorously for all publicity on current forest fire damage. "It would help the public to realize how constant and how grave is the menace of fire and by arousing curiosity lead eventually to a demand that fires be stopped. I know that many people will not agree with this suggestion: they will be mostly city people, mostly financial people, but I submit that accurate information is often less damaging and more helpful than vague rumors which cannot be prevented."

## Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 18, 1930.—The Barton, Duer & Koch Paper Company has been awarded the contract for furnishing the Government Printing Office with 40,000 pounds of best quality hard rolled binders board, 25x30, at 5.5 cents per pound. The American Writing Paper Company will furnish 12,560 sheets (1,237 pounds) of 100 per cent rag white chart paper at 33.6 cents per pound. Bids for both of these items were received on June 2.



THE HOME OF ALBANY FELTS

# ALBANY FELTS

## FOR COARSE PAPERS

The widespread use of Albany Felts for kraft, newsprint and other coarse papers is a striking example of the soundness of our designing and manufacturing methods. ¶Hardly a new mill on the West Coast, the South, Middle West or East has been put into production on coarse papers in the last five years without Albany Felts. ¶Their remarkable endurance, combined with ample porosity to permit rapid water-removal at high speeds, has led papermakers everywhere to adopt Albany Felts for best results. ¶If you do not know why they are constantly growing in favor for coarse papers on fast-running Fourdriniers, make it a point to try a set soon.

**ALBANY FELT COMPANY**
**ALBANY, N. Y.**

# Obituary

### Percy B. Wilson

MONTREAL, Que., June 16, 1930.—Quite a shock has been caused in news print circles, here, by the sudden death of Percy B. Wilson, the chief executive officer of the Newsprint Institute of Canada. For many years Mr. Wilson was a frequent visitor to Montreal through his close connection with the Mead paper interests, and for the past few years has been residing here. His wide experience in the news print field, resulted in his counsel being eagerly sought throughout the many news print developments, and among his associates it was often remarked that his constant endeavor was to find a solution that would come closest to being equally fair to all concerned.

Mr. Wilson was widely known in the pulp and paper business, not only in Canada, but in the United States as well. In 1913, he came to Canada and immediately became engaged in this field. In 1927, he became secretary and chief executive officer of the Newsprint Institute of Canada, a post which he held at the time of his death.

Mr. Wilson was born in London, England, the son of James and Clara (Bateman) Wilson. He was educated at Huntingdon House School, Teddington, and began his business career as a chartered accountant. In 1981, he left England to become financial manager of the St. Augustine Diamond Mine, Ltd., at Kimberly, South Africa, where he remained until 1894, when he returned to England until 1913, in which year he came to Canada.

His activities here began with work as secretary and director of the Forest Mills and British Columbia, Ltd., at Revelstoke, B. C., shortly after his arrival. In 1914, he became comptroller and director of the Spanish River Pulp and Paper Mills, at Sault Ste. Marie, and later he was made vice-president.

During the war, Mr. Wilson served with the 51st "Soo" Rifles, holding the rank of major.

In January, 1917, he became president of the Canadian Pulp and Paper Association. He was also vice-president of the Fort William Paper Company, Ltd., director of the North American Securities, Ltd., president of the Canadian Forestry Association, and in 1927, he accepted the position with the Newsprint Institute of Canada, moving to Montreal and establishing his residence on Belvedere road, Westmount.

1893, Mr. Wilson married Isabel Lucy Davies, who survives him with two sons, P. Roy and Clifford P., and two daughters, Mrs. Humphrey Auden and Miss Kathleen M. Wilson. The family were with him at the time of his death.

Mr. Wilson is also survived by one brother, James E. Wilson, and four sisters, Mrs. Robert Enock, Mrs. T. Davis, Miss Annie Wilson and Miss Minnie Wilson, all of England.

At the time of his death, Mr. Wilson was also chairman of the news print section of the Canadian Pulp and Paper Association and a director of the Abitibi Power and Paper Company. Local clubs to which he belonged, included the St. James Club, the Royal Montreal Golf Club and the Mount Bruno Golf Club.

### George F. Barton

George Frederick Barton, one of the most widely known and highly respected salesmen in the paper industry, died at his residence, Brightwaters, Long Island, on Sunday last, June 15, aged 69. The funeral service was held at Greenwood Cemetery Chapel, Brooklyn, N. Y., yesterday, Wednesday.

Mr. Barton had been a member of the staff of Wilkinson Bros. & Co., of 419 Broome street, New York, for the past twenty-eight years, and previously had been with the Wilson & Towne Paper Company, and the Odell Manufacturing Company, New York.

Experience was gained by Mr. Barton, from his boyhood days to manhood, in every branch of the manufacturing business with the Seymour Paper Company at their plant at Windsor Locks, Conn.

Mr. Barton is survived by his widow, Amy Barton; a son, Hampton Barton; and a daughter, Mrs. Mildred Bryan.

### Philip Nash

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 16, 1930.—Announcement is made of the death of Phillip Nash at Madawaska, Me., on June 11. Mr. Nash was manager of the Lakeview Paper Company, Neenah, Wis., until about a year ago, when the mill was sold. He then went to Madawaska, where he was general manager of the catalog paper mills of the Fraser Paper Company. His father, William C. Nash, operated the Lakeview for many years before him. Mr. Nash was 42 years of age. He had been in ill health for two years, during which he submitted to two major operations. The body was conveyed to Neenah, for burial.

### Mrs. George L. Bidwell

Mrs. George L. Bidwell, of Riegelsville, Pennsylvania was instantly killed in an automobile accident at Winchester, Virginia on Tuesday, June 10th. She is survived by her husband, one son and two daughters; also her mother, Mrs. Case.

George L. Bidwell is vice president of the Riegel Paper Corporation and general superintendent of its mills at Riegelsville and Milford, N. J.

## Wisconsin Cost Men to Meet

A meeting of the Wisconsin Local Division of the Cost Department of the American Paper and Pulp Association, will be held at Essex Lodge, at Clear Lake, Tomahawk, Wis., on Saturday, June 28, 1930. Those who attended the very successful and enjoyable meeting of this Division last year, will look forward to a repetition of as good if not better time, at the same Lodge, on June 28.

The principal speaker, Fred C. Kellogg, member of the firm of Elwell, Kiekhofer & Co., Milwaukee, and Madison, Wis., will give a paper on "The Treatment of Capital Stock of No Par Value on the Balance Sheet," a subject which is daily becoming of more interest. A general discussion on the subject will follow.

It is intended that those attending shall bring their wives or lady friends, who will have plenty of opportunity of enjoying themselves while the members are attending the session. It is especially hoped that as many as possible from the mills in Wisconsin or other states will take advantage of the opportunity to attend this meeting, whether members of the Wisconsin Local Division of the Cost Department of the American Paper and Pulp Association or not.

Full details can be obtained from the secretary-treasurer of the Wisconsin Local Division of the Cost Department of the American Paper and Pulp Association, Miss I. M. Carney, Tomahawk Kraft Paper Company, Tomahawk, Wis.

The program will start after luncheon, with golf on the sporty nine hole Golf Course adjoining Essex Lodge. Dinner will be served at six o'clock sharp, following which Mr. Kellogg will give his address, and then dancing.

Make your reservations early and come prepared for a really enjoyable and worth while meeting and outing.

## Work Progressing on Rice Paper Mill

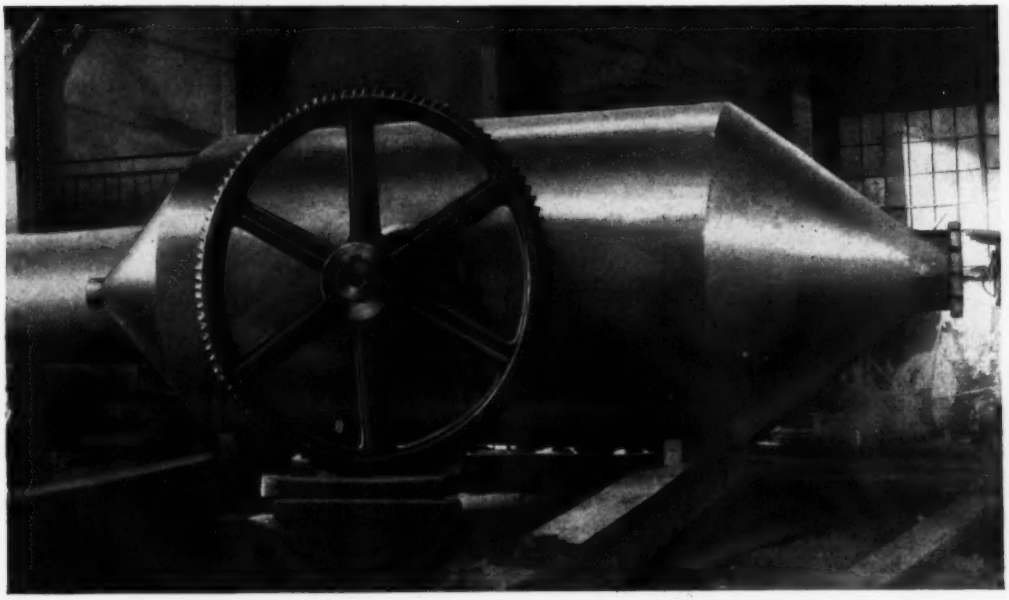
CHICO, Cal., June 12, 1930.—Excavations for the foundation of the Richvale rice paper mill is progressing rapidly, it was announced yesterday.

The mill probably will be completed sometime in December, according to present plans. It will be erected at a cost of nearly half a million dollars.

The structure is being built by the Pacific Coast Pulp and Paper Corporation. C. A. Kieren, general superintendent, and Charles Mabrey of Sacramento, contractor, were expected in Oroville today in connection with construction activities.

Temporary offices for the company may be established in Oroville.

# Kellogg forge and hammer lap welding
## *sets a new standard of digester dependability*



*Kellogg Forge and Hammer Lap Welded Rotary Digester, 10 ft., 0 inch I. D. x 28 ft., 6 inches long x 1½ inches thick.*

UNDER severe conditions of changing temperatures and pressures and highly caustic liquors, Kellogg Forge and Hammer Lap Welded Digesters are constantly demonstrating their greater dependability.

For years Kellogg digesters have been serving the paper industry, providing definitely longer unit life and proportionately lower maintenance. Kellogg digesters, which are completely free from rivets and joints, have no surfaces subject to attack by caustic embrittlement.

The long list of paper and pulp manufacturers who repeatedly specify Kellogg digesters is the strongest evidence of their efficiency and economy. Write for details.

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# KELLOGG

FORGE AND HAMMER LAP WELDED BOILER DRUMS . . . RECEIVERS . . . SEPARATORS HEADERS . . . COMPLETE POWER PLANT PIPING

ALL KELLOGG FORGE AND HAMMER LAP WELDED PRODUCTS ARE INSURABLE

## News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., June 16, 1930.—Members and guests of the Boston Paper Trade Association, numbering about 100, passed a most enjoyable day at the Charles River Country Club, Newton Centre, Mass., last Tuesday, when the regular June meeting and outing was held, for the fifth consecutive time at this club. Members of the party entered into the sports with great enthusiasm and the golfers started early in the day for their favorite diversion. There was a delectable buffet luncheon at the club house at 1:30. At the business meeting President Albert R. Smith read a telegram from Secretary F. Bendel Tracy sent from Los Angeles, Calif., with greetings and best wishes. Anthon Olafsen, of Mechanic Falls, Me., proposed by C. H. Wood, was elected to "regular" membership, and Blair B. Stringfellow, Jr., Boston, Mass., proposed by Floyd H. Blackman, and Ray A. Wight, Dalton, Mass., proposed by Reuben C. Pierce, were elected to special membership.

### Winners in Golf Tournament

E. D. Bement, chairman of the golf committee, announced the winners in the tournament. W. E. Porter, Jr., won the best net in 68 and the Championship Cup for a year, which must be won three times to become the property of the winner. Frank H. Merrill tied with James B. Ramage for second net and won the toss-up. In Class A, Mr. Ramage won the best gross in 81 and in Class B Frank B. Cummings won the best gross and best net, 101-77. The second net was tied between L. E. Maglathlin and F. B. Korbel, each 78. Of the guests Robert O'Neil's was best gross in 74 and C. F. Jameson low net. In the kicker's handicap was a tie between J. L. Munro, Frank H. Merrill and Wm. N. Stetson, Jr., in which Mr. Munro won the toss-up. Norman Harrower made the best score for nine holes, selected drives. The detailed scores are as follows: Class A—W. E. Porter, Jr., 84-68; John B. Ramage, 81-61; F. Farrell, 89-71; Floyd H. Blackman, 92-72; J. Van Horn, 91-73; R. B. Taft, 82-14; Graham Blandy, 2d, 95-75; W. N. Stetson, Jr., 88-75; Norman Harrower, 83-75; J. L. Munro, 95-75; E. R. Lyman, 98-77. Class B—F. B. Cummings, 101-77; F. B. Korbel, 108-78; L. E. Maglathlin, 102-78; J. G. Swift, 103-79; A. P. Mitchell, 106-82; E. F. Ross, 107-83; R. H. Ways, 113-85; John W. Vivian, 111-85; H. Fowler, 166-86; C. Ward, 113-89; W. P. Simonds, 124-94. The putting contest was won by Graham Blandy, 2d.

### Winners of Other Events

Herbert C. Ham, chairman of the sports committee, announced winners of other events. "A New Game," or throwing paper darts, was won by R. P. Teele; "Rolling Their Own," or bowling on the green, by Thomas C. Walsh, Sr.; "Paper Men in Tears," or tearing paper, won by Lionel A. Walden; "Ringer Salesmen," or pitching quoits, W. J. McLellan and Thomas C. Walsh, Jr.; "Untangling the Twine Situation," or tying tag twines to the greatest length, Blair B. Stringfellow, Jr.

The golf committee was composed of E. D. Bement, chairman, Norman Harrower, W. E. Porter, Jr., W. L. Muzzy, Wm. N. Stetson, Jr., Jesse G. Swift, and F. B. Cummings. Sports Committee—Herbert C. Ham, chairman, R. F. Chapin, W. J. McLellan, Nathan S. Clark, John H. Brewer, Willard H. Loud, Fred W. Main and T. Charles Casey.

## News of the Chicago Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 16, 1930.—"Try This Remarkable Mosinee Dubltowl," is the inviting title of a direct mail piece issued by McNulty Paper and Twine Corporation, Chicago distributors. The selling message is printed on the Dubltowl itself and contains descriptive matter, suggested uses and names of many users. The effectiveness of the advertising is doubled because of the unusual appearance of the paper upon which it is printed.

Chicago envelope manufacturers continue to make good use of the Envelope Manufacturers Association of America and, at present, are distributing, with their direct mail, reprints of the association advertisement headed "Even Diamonds Are Presented in Beautiful Cases."

The weeks supply of direct mail is further enhanced by the appearance of "Rags In Paper," published by the Rag Content Paper Manufacturers Association. This issue features a separate sheet illustrating an attractive letter head in two colors—blue and black—and present an interesting editorial "What Are You Buying?" The editorial is a tribute to the progress the industry is making in improving its product for the consuming public.

"Plunder—the first habit of trade," is the heading (illustration of a pirate making it even more effective) of a direct mail piece issued by the Seaman Paper Company advertising Caslon Bond, made by the Munising Paper Company. Various commodities are shown on the broadside, illustrating their appearance on this paper.

An attractive folder describing Ivory Peacock Folding Enamel was issued by Bermingham & Prosser. The folder is printed on this new enamel paper. It is described as being excellent for halftones, takes colors in good shape, has excellent folding qualities and comes in an attractive price range.

A breezy, interesting issue is the current number of "The Forecastle" published by the Seaman Paper Company and printed on Strathmore Snowdrift. The issue features the announcement of Seaman's representation of Strathmore papers.

## Specialty Paper Demand Improves in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., June 16, 1930.—What increase is noted in the paper business here is coming from the hot weather specialties. Such items as paper towels, napkins, cups, plates and all such items have had a boost in business with the coming of what might be termed the first really hot weather of the present season. Some increase also is noted in the bag business. Paper bags of all types, particularly cellophane and like merchandise seem to be moving a little more rapidly than formerly. Novelty bags also are in good position insofar as demand is concerned. However, there seems to be a wide range of prices and the anxiety for business it is reported, has brought about some disastrous price slashing.

While the demand for roofing and building papers is not what was expected, the last two weeks have seen a slight increase. Prices are well maintained, but the demand does not look so good. Local dealers are not expecting much business until the fall building season.

Some demand is seen for fine papers, bond and book papers moving to consumers in small lots. Local printers say business is bad and they are buying only for current consumption. There is some buying of card boards and bristols.

Generally speaking the local trade does not seem particularly interested in the tariff. Most of the local jobbers are noncommittal on the subject, but believe regardless of tariff business must pick up in the fall. They say it can't get much lower.

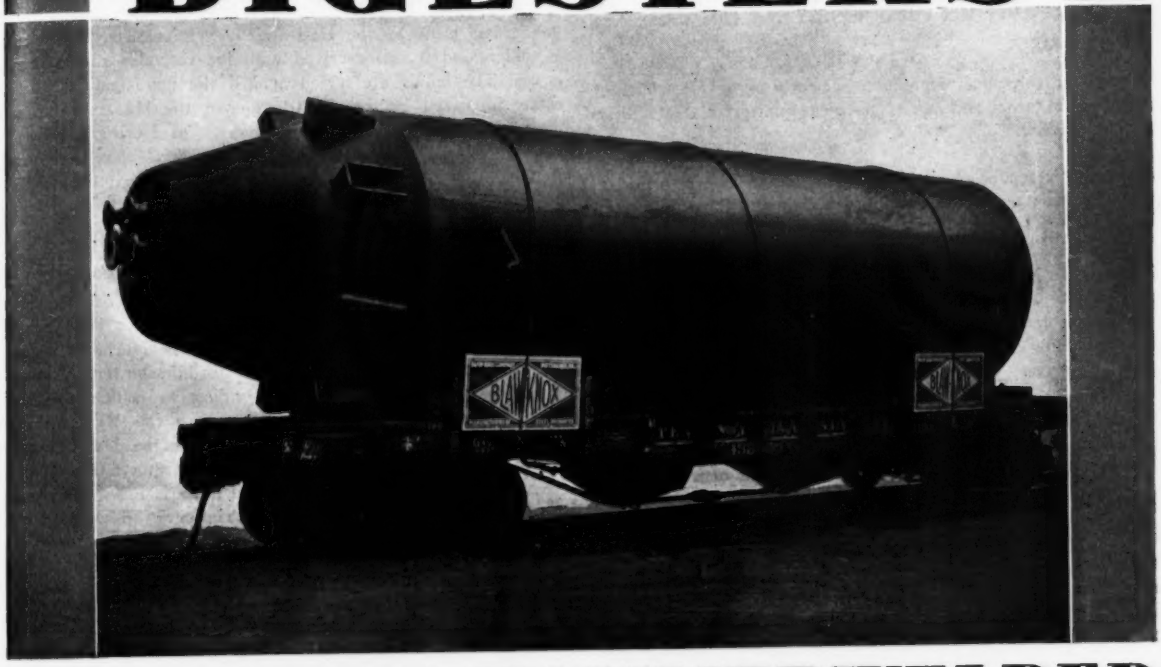
## Japanese Paper Production Decreases

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 18, 1930.—The Japanese Paper Manufacturers Association report production by the association mills during the first quarter of the current year as totaling 168,893 short tons compared with 173,832 tons during the corresponding period of last year.

Sales by the mills likewise decreased, those for the first quarter of 1929 totaling 174,035 tons and for the first three months of this year, 168,729 tons. News print paper alone accounts for 40 per cent of the total production, while other printing papers represent an additional 20 per cent. The remaining production consists largely of imitation Torinoke paper, wrapping paper, and paper board. The output of writing papers represents only about 1 per cent of the total mill production.

# DIGESTERS




## FORGE AND HAMMERWELDED

**BLAW-KNOX FORGE AND HAMMERWELDED DIGESTERS are designed to comply strictly with the A. S. M. E. code for unfired pressure vessels.**

**They are forge and hammerwelded to withstand great pressure, and annealed in one piece to remove all strain. The result is a one-piece, bottletight, seamless, absolutely safe vessel.**

**Blaw-Knox guarantees every Pulp Digester against failure.**

**BLAW-KNOX COMPANY**
**2038 Farmers Bank Building**
**Pittsburgh, Pa.**

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| NEW YORK | CHICAGO | CLEVELAND |
| DETROIT | BUFFALO | BIRMINGHAM |
| PHILADELPHIA | BALTIMORE | BOSTON |

*Export Division:*
Canadian Pacific Bldg., New York, N. Y.
London, England, New Oxford House, Hart St., Holborn, W. C. 1
Paris, France, 1 Rue DeClichy. Milano, Italy, 6 Via S. Agnese, 6
Dusseldorf, Germany, 17, Bismarckstrasse

# BLAW-KNOX

# New York Trade Jottings

The Ticonderoga Pulp and Paper Company have removed to new quarters in the Daily News Building, 220 East 42nd street, New York.

* * *

Herman Grover, paper merchant, formerly of 451 Pearl street, has removed to larger and more convenient quarters at 230 William street, New York.

* * *

Thos. E. Warren has tendered his resignation as vice-president and general manager of the Ticonderoga Pulp and Paper Company, of 220 East 42nd street, New York.

* * *

Schorsch & Co., paper bag and sack manufacturers, office and factory 133rd street and Brook avenue, New York, has added several trunk lines to their telephone facilities. The telephone numbers are now Mott Haven, 6900-1-2-3-4.

* * *

The American Arch Company, manufacturers of air-cooled walls and suspended arches for boiler furnaces and industrial furnaces, announces the removal of its main offices from 17 East 42nd street to the Lincoln Building, 60 East 42nd street, New York.

* * *

Announcement is made by the Kalbfleisch Corporation of 200 Fifth avenue, New York, that Joseph D. Lowery has been appointed sales manager of the Heavy Chemicals Division of that company. Mr. Lowery has been with the Kalbfleisch organization more than fifteen years.

* * *

Sol Ash, Inc., paper mill supply dealers, have removed their offices from the fourteenth floor of 1440 Broadway, New York, to larger quarters on the sixteenth floor of the same building. At a meeting of the board of directors recently, John J. Byrnes was elected vice president and A. M. Cogem was elected secretary of the corporation.

* * *

Charles H. Preston has opened an office at 11 West 42nd street, Room 2913, to distribute paper to the jobbing trade in the East. For a number of years Mr. Preston was New York representative for the York Haven Paper Company and has a large acquaintance in the paper industry. Mr. Preston is open to take on one or two additional lines of any mills requiring eastern representation.

## Ranier Stock on Seattle Exchange

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 12, 1930.—Stock of the Ranier Pulp and Paper Company, Class "A" common was called for trading on the Seattle exchange June 10. Listing is said to cover the entire amount of 100,000 shares, all of which are outstanding, no par value, which have been in the Seattle curb but are being transferred. The company also has 123,000 shares of class "B" common which is unlisted.

The company manufactures bleached and unbleached sulphite pulp at its Shelton, Wash., plant, the daily capacity of which is 170 tons unbleached and 155 tons of bleached. Incorporation of this company occurred April 26, 1926 under the laws of the state of Delaware. Officers are: President, E. M. Mills; vice-presidents, I. Zellerbach, J. D. Zellerbach, J. C. Higgins; secretary, W. L. Raymond; treasurer, S. Sonnenberg.

Net profits for the 11 months to April 1, 1930, out of sales in excess of $2,000,000, were $500,000. Total assets of this time were in excess of $3,380,000 and surplus nearly $3,170,000.

Stock of the company is also listed on the San Francisco exchange and quoted in the unlisted division of the Portland exchange.

## Conklingville Reservoir Bonds Sold

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., June 16, 1930.—The final issue of bonds to promote the Conklingville Reservoir project was placed before the public last week by the Hudson River Regulating Board and it is understood it was received with the response shown previous issues. The bonds are levied against the municipalities and real estate improved by the construction of the big reservoir which prominent paper manufacturing concerns of Northern New York have sponsored. An additional issue of bonds has been authorized but the Regulating Board has announced that these will not be placed on the market before the fall of next year.

Operation of the first of the new power plants to follow the reservoir project is awaiting only the summer time drop in the Upper Hudson River near Conklingville where a 40,000 horsepower unit was recently completed by the New York Power and Light Company. The enlargement of the Spiers Falls plant of the power concern is due to be completed late this year and will give it at total capacity of 100,000 horsepower. A number of other projects are reported pending of which the largest will be launched at Hudson Falls where the Niagara-Hudson Company recently acquired the holdings of the Union Bag and Paper Corporation. It is estimated that within a few years increased development of approximately 250,000 horsepower will have been secured through the stabilization of flow obtained by the reservoir control.

## Cut in Stumpage Dues

A reduction in stumpage dues in the Province of Quebec has been made by the Provincial Government, this step being taken to meet the competition of British Columbia mills, whose timber products have flooded Eastern Canada for some years, and whose activities have caused depression in Quebec.

The reduction in dues, which runs from 70 cents to $2 per 1,000 feet, was officially announced in an order-in-council yesterday.

Whereas the former stumpage dues on white pine, oak, walnut and hickory were $5 per 1,000 board feet, it is $3 per thousand under the new rates, while on tamarac, maple, yellow birch, basswood, ash, elm and red pine, the new rates are $2.50 per 1,000 as compared to $3.50 formerly. On spruce, jack pine, balsam, cedar, hemlock, aspen and poplar the new stumpage rates are $2.00 per 1,000, against $2.70 formerly.

These new rates will only apply to timber cut for saw-mill purposes, and returns from Quebec lumber companies must be accompanied by a sworn declaration that the timber is used as sawn lumber only.

## Fires on Pulp Lands Still Menace

After several days of comparative freedom from forest fires, north western Ontario again faced the menace as bush country stretching from Port Arthur west to the Manitoba boundary was reported to be in flames. But this time rangers have ample equipment on hand. Hundreds of fire fighters are stationed at strategic points ready to cope with any emergency. Officials of the Forestry Branch in Toronto stated that the situation was not as serious as it was ten days ago but that a close watch is being kept over the danger zones. Lack of rain in the north west part of the province has made the bush and timber very dry and fires which were under control now threatened to spread. Fifty square miles of territory around Ignace have been closed to all travelers and other areas will be closed later. From Prince Albert, Sask., comes word that twenty-five forest fires are burning in northern Saskatchewan patrolled by the Dominion Forest Branch, including five in the Birch Bark Lake area in the timber berth of the Pas Lumber Company. If the present calmness prevails, they state, there will be no let-up in the struggle. Fires over the week-end swept through half of the 20-square-mile timber berth at Birch Bark Lake.

# What do users say?

# Is the Bolton Inverted Wedge Plug practical?

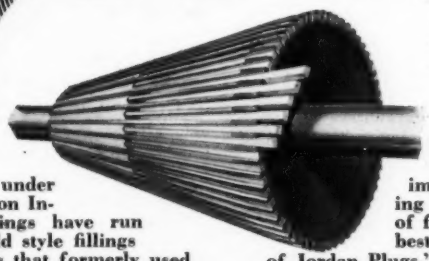
# How many are in service?

# How long?

# Will it stand up under hard service?

# What about corrosion?

# What will it do for us?



**Tested for more than 5 years under the severest kind of service Bolton Inverted Wedge Plugs and fillings have run months without a stop where old style fillings used to last 4 to 6 weeks. Mills that formerly used solid cast manganese plugs to prevent chewing up of wedges, bending and breaking of knives, trouble with bands and tearing out of lugs, are replacing with Bolton Plugs and obtaining large savings due to lowered maintenance and power costs.**

**More than 116 Bolton Inverted Wedge Plugs are now in operation—some for 5 years—and not one rusted, corroded or loose knife.**

**Fewer shutdowns to chip woods or replace knives, longer life for knives, greatly reduced maintenance costs, increased tonnage and more uniform quality,—these are a few of the reasons why Bolton Plugs quickly pay for themselves out of savings.**

**Made to fit any Jordan, write today for complete information and prices, you cannot afford to overlook the advantages of these modern plugs.**

***A few of the typical letters we receive:***

**"The writer gladly recommends this style of Plug in preference to any other Jordan Plug made. It is impossible to tear the knives or filling out of this Plug. As a matter of fact, it is indestructible and is the best thing we have seen in the line of Jordan Plugs."**

**"We had only been running a Jordan Filling from two to six weeks. We never wore them out but tore them out. We are running these Bandless Plugs continuously and are securing from four to six months' wear out of each Jordan without any trouble. We find that our Jordan repairs have been reduced from 100% to 33%."**

**"They are the best type of plug with which we have had any experience. Any time we want to change the kind or size of edges of knives, we are all set, because this plug will take any kind or size of knives. No more plugs to buy."**

**"While we have not refilled either one of these plugs they are giving very satisfactory service and we feel that they are the best type of plug with which we have had any experience. They are very rugged and we do not see how any normal operation could in any way damage them."**

# John W. Bolton and Sons, Inc.

## LAWRENCE : : : MASSACHUSETTS

3950

# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

### Construction News

**Lee, Mass.**—The Mountain Mill Company, with New York offices at 60 East 42nd street, will soon have completed extensive structural and mechanical improvements in both the Beater department and Machine Room. Larger beating capacity and a lengthened Fourdrinier part will increase their production of glassine and greaseproof papers by 20 per cent. The project also includes improvements in respect to electric power generation and distribution. Johnson & Wierk, Inc., Grand Central Terminal Building, New York, N. Y. are the engineers.

**Peoria, Ill.**—The Muirson Label and Carton Company, Decatur street and Irving avenue, Brooklyn, N. Y., manufacturer of paper boxes, cartons,etc., has awarded a general building contract to the W. M. Allen & Son Company, Jefferson Building, Peoria, for a new branch plant at Peoria. It will be one and two-story, reported to cost about $100,000, with machinery. Superstructure will be placed under way at once. R. I. Bentley is one of the heads of the company, in charge.

**Ridgefield, N. J.**—The Lowe Paper Company, River road, has had plans prepared for a new addition to local mill, to be equipped as a filter unit, and will place work in progress at an early date. It will be one-story, 45 x 115 feet, to cost close to $40,000 with equipment. F. L. Smith, 21 East 40th street, New York, is architect and engineer.

**Louisville, Ky.**—The Acme Paper Storage Company is planning early rebuilding of portion of storage and distributing plant at 141 North Second street, recently destroyed by fire, with loss reported at close to $25,000 including stock.

**Three Rivers, Mich.**—Eddy Paper Corporation, Three Rivers, has approved final plans for a new addition to mill, awarding general contract to the O. F. Miller Company, Kalamazoo, Mich. New unit will be one-story, 100 x 500 feet, designed primarily for storage and distributing service, estimated to cost over $135,000, wth equipment.

**St. Helens, Ore.**—In connection with the early operation of its new local mill for the production of insulating board products, in course of construction for a number of months past, the Fir-Tex Insulating Board Company has arranged with sawmills in the vicinity of the Columbia River, between Portland and Astoria, Ore., for raw material supply, utilizing waste material from these plants. Chippers will be installed at the different mills to reduce slabwood pieces to half-inch chips. These will be delivered to the board mill on barges, and then taken by means of a conveyor to a battery of rotary digesters for initial treatment at the plant. The mill will have a rated capacity of about 250,000 feet per day, or an annual basis of 75,000 feet of finished material. The plant will be given its initial run in July, and is scheduled for continuous production from that time. It will represent an expenditure of about $1,500,000, including machinery. A. E. Millington is vice-president and general manager.

**Hawarden, Iowa**—The Maizewood Products Company, 209 South State street, Chicago, Ill., manufacturer of paper products using waste cornstalks as raw material, is reported to have negotiations under way with the Chamber of Commerce, Hawarden, relative to establishment of new mill in that vicinity. Officials of the Chamber of Commerce will make a survey of raw material resources in the district and ascertain other information for the projected plant, which is reported to cost over $500,000, with machinery.

**Berlin, N. H.**—The Brown Company, Berlin, is said to be planning the early rebuilding of portion of fibre conduit manufacturing plant at local mill, destroyed by fire, June 5, with loss reported over $30,000, including equipment and stock. Reconstruction is expected to cost close to a like sum.

**Salem, Ore.**—The Oregon Pulp and Paper Company, Salem, is reported to be planning a new addition to local mill, to be one-story, estimated to cost over $85,000, with equipment. It is understood that an architect will be selected to prepare plans at an early date.

**Long Island City, N. Y.**—The Park Tissue Mills, Inc., recently organized under state laws with a capital of $100,000, will take over and expand local company of the same name, with mill at Thompson avenue and Manly street. It is proposed to develop increased output in near future. The incorporators of the new company include Morris Arnt and Samuel Wishnick.

**Newton, N. C.**—The Fiber Manufacturing Company, Newton, has been carrying out an expansion and betterment program at its local mill, including the installation of machinery for considerable advance in former output. The plant is now manufacturing a number of specialties from crude material to finished products, including brake lining specialties, roofing products, etc.

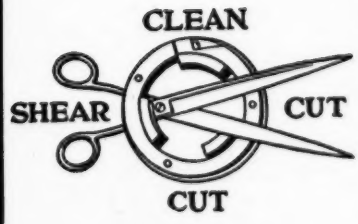
**Luke, Md.**—Fire recently damaged a portion of the local mill of the West Virginia Pulp and Paper Company, with loss reported at close to $10,000. The damage will be replaced at once. Headquarters of the company are at 230 Park avenue, New York.

**Chicago, Ill.**—The Container Corporation of America, Inc., 111 West Washington street, has been running on a basis of about 66 per cent of capacity from the first of the year until May, when a slight advance in this output was made. This production compares with a basis of 78 per cent of capacity during 1929. It is understood that orders have been increasing recently, with prospects improving for the last half of the year. Walter P. Paepcke is president.

**Chicago, Ill.**—The Vortex Manufacturing Company, 421 North Western avenue, manufacturer of paper cups, etc., has completed plans and is said to be arranging an early call for bids on general contract for a new addition to its plant, recently announced in these columns. It will be four-story, brick, estimated to cost over $100,000, with equipment. Weiss & Neistadt, 53 West Jackson boulevard, Chicago, are architects. P. T. Potts is one of the heads of the company, in charge.

**Philadelphia, Pa.**—The Morris Karden Paper Company, 224 Pine street, manufacturer of paper boxes, cartons, etc., has work under way on a new mill unit on adjoining site, for which general contract recently was let to Albert Laub, 812 West Wyoming street, designed to develop considerable increase in present capacity.

THIS Langston Type "AA" Slitter and Rewinder shows two special items of equipment. First, the power lift for pressure roll, which operates through a push button and a motor and worm wheel drive, locking the roll in any position. Second, the Koegel-Langston type of shear cutters—particularly useful for wax papers, as the wax will not build up on the cutting edges—they are easily sharpened and set. The Type "AA" is built with 5" and 8" winding drums . . . roller bearing wherever room will permit . . . furnished in widths up to 75".




SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

# LANGSTON SLITTERS

and will push the structure to early completion. Robert N. Dippy, 1600 Walnut street, is architect in charge.

**Chester, Pa.**—The Scott Paper Company is running on a capacity schedule at its local tissue mill, giving employment to full working force, and will hold to this basis of output for an indefinite period. It is understood that orders and distribution are in excess of this time a year ago, as has been the case for a number of months past.

**Rumford, Me.**—The Oxford Paper Company has begun work on a new steam power plant at its local mill, reported to cost more than $85,000 with equipment, and will use for increased power supply for paper production. The unit is scheduled for completion during the summer, and will be placed in service at once. Charles T. Main, Inc., 201 Devonshire street, Boston, Mass., is architect and engineer. The Morton C. Tuttle Company, 31 St. James street, Boston, is contractor for the structure.

**St. Johns, N. F.**—The proposed news print mill to be constructed on the Gander River, recently projected by the Hearst Syndicate, New York, and the Reid-Newfoundland Company, St. Johns, will be held in temporary abeyance, and no agreement will be submitted to the Government Legislature for ratification during the present session. It is said that details of the project will be arranged so that the proposition can be presented at a later session of the Legislature. The proposed mill will have a capacity of 1000 tons of newsprint a day, and the construction in Newfoundland is contingent on securing from the Government certain rights for timber in areas in Labrador. It is reported to represent an investment of over $5,000,000. The Dominion Newsprint Company is interested in the project and will be the operating interest in the project.

**Frankfort-on-Main, Germany**—The Silesian Paper Company is taking over the pulp and paper mills in this district of the Ostdeutsche Zellstoff and Papierfabriken, and will consolidate under one management. The consolidated company is planning a general expansion and improvement program at the different mills, and it is understood that the majority of the plants will be continued in service as in the past. The Ostdeutsche company will be dissolved.

### New Companies, Etc.

**Utica, N. Y.**—The Wadding Sales Corporation has been incorporated with a capital of 200 shares of stock, no par value, to manufacture and deal in paper goods of various kinds. The company is represented by Hart, Senior & Nichols, Utica, attorneys.

**Albany, N. Y.**—The Graham Paper Company, St. Louis, Mo., a Missouri corporation, has filed notice of organization to operate in New York with a capital of $3,000,000. Headquarters will be established in New York City.

**Chicago, Ill.**—The D. W. Dietrich Paper Company, 228 North La Salle street, Chicago, has been formed with a capital of $25,000, to manufacture and deal in paper products. The incorporators are Duncan W. Dietrich, L. M. Dietrich and Gerald F. Miner.

**Albany, N. Y.**—The Albany Perforated Wrapping Paper Company has filed notice of change in company name to the A. P. W. Paper Company.

## Oregon Pulp & Paper Co. Improvements

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 12, 1930.—The Oregon Pulp and Paper Company, Salem, is asking vacation of 43 feet along its building on Trade street in connection with the new 2-story concrete building which they are to erect at a cost of $60,000. A new boiler unit costing $20,000 to eliminate the cinder nuisance about which complaint has been made is part of the proposed improvement, as is also a new filteration unit also costing $20,000. A finishing room will occupy the new addition. Between this building and the Southern Pacific railroad depot will be a paved roadway 56 feet wide, open to traffic.

## News of the Northwest Industry

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 12, 1930.—A report which is said to be authentic states that the Cascade Paper Company, Tacoma, Wash., which recently went into the hands of a receiver, will reopen after some reorganization has been effected. A receiver was appointed following suit brought against the company by the Defiance Lumber Company on a promissory note for $29,000 and a claim for $31,000 for wood furnished for pulp material. The paper company did not combat the suit, admitting the allegations, and it is understood that opening of the plant will probably be under management of the receivership.

C. L. Shorno, vice-president of Blake, Moffitt & Towne, is a member of the executive committee for Buyer's Weeks which is an annual affair held in Portland, Oregon, in August.

Construction on the new $3,500,000 unit of the Puget Sound Pulp and Timber Company at Everett, Wash., is progressing so successfully that it is expected operation will start on a limited basis July 1. The work started about a year ago. The city of Everett is rushing to completion the installation of a temporary pumping plant at Pilchuck river to furnish water to the new plant until Everett's new $2,000,000 water system from the Sultan river is finished, which will be about August 1. G. J. Armsbruster has been appointed superintendent, having recently arrived from Athol, New Brunswick, according to Ossian Anderson, president of the company.

J. H. Burnside has been appointed promotion manager for Fir-Tex Insulating Board Company which is just completing a new $2,500,000 plant at St. Helens, Oregon. The Botsford-Constantine advertising agency has been retained to handle advertising for Fir-Tex.

E. R. Brown of the Crown-Willamette Paper Company was elected to represent his company on the executive board of the Oregon Safety Congress, a newly formed organization started at a meeting of industrial leaders in Portland, June 7. The purpose of the new organization is "to carry the message of safety to mill, factory, forest and workshop through the state." The next meeting of the Safety Congress will be held in Salem in December. An interesting program was featured at the Portland meeting.

## "What About Printing"

The Champion Coated Paper Company, Hamilton, Ohio, recently received from the Hudson County Typothetae, the following resolutions, regarding its book, "What About Printing:"—

RESOLVED, that the Executive Committee of the Hudson County Typothetae hereby congratulates The Champion Coated Paper Company of Hamilton, Ohio, on its magnificient contribution to the cause of "Direct Advertising" in the publication and distribution of its book, "What About Printing;" and be it further

RESOLVED, that every member of the Hudson County Typothetae is hereby urged to read and study the lesson to be found in a thorough perusal of "What About Printing."

Yours very truly,

THE HUDSON COUNTY TYPOTHETAE.

(Signed) Miss A. I. Massimine.

## Taggart Paper Co. Declares Dividend

WATERTOWN, N. Y., June 16, 1930.—A quarterly dividend of twenty-five cents on the common stock of the Taggart Paper Bag Corporation was declared this week at a meeting of stockholders payable to stock of record of June 10. The usual quarterly dividend of fifty cents on the Class A stock and $1.75 on the preferred stock was also declared. The annual meeting of the directors of the firm is scheduled to take place this month at Baltimore, Md. A few days ago a quarterly dividend of twenty-five cents on St. Regis common stock was also declared.

1930 EDITION ~ PRICE $7.50

# LOCKWOOD'S DIRECTORY

*of the*

PAPER & ALLIED TRADES

CORRECTED UP-TO-DATE

The 55th Consecutive Annual Edition

## THE OLDEST INDUSTRIAL DIRECTORY IN THE UNITED STATES

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10 E. 39th St. ~~ NEW YORK, N.Y., U.S.A.

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## NEW FOREST PRODUCTS BUILDING

Members of the pulp and paper industry will be gratified to learn that adequate and permanent Federal quarters for the Forest Products Laboratory at Madison, Wis., are now in sight of realization through recent favorable action of Congress and the Administration.

Congressional authorization for an adequate Federal building became law when signed by President Hoover on April 15, and the first appropriation installment has been provided effective July 1 of this year; authority has also been given the Secretary of Agriculture to enter into contracts for the complete building.

Following the President's call last winter for "energetic yet prudent pursuit of public works" with a view to strengthening the economic situation, the proposal for adequate and permanent quarters for the Laboratory came before Congress at the recommendation of Secretary Hyde and received the broad endorsement of forestry and land-owning groups, producers and consumers of lumber and wood products, and public and regional interests, as well as the effective support of leaders in the House and Senate who have taken a realistic view of the relation existing between forest products research and satisfactory forest utilization.

Within the next eighteen months much-needed accommodations should be available for Laboratory research projects now temporarily handled in several University of Wisconsin buildings, and the building plans also afford scope for expansion of work during the next few years as authorized under the McNary-McSweeney Forest Research Act of 1928.

It may thus be said that the Government has at last provided a home for its Laboratory offspring now approaching its twenty-first birthday. At the same time the fostering cooperation of the University of Wisconsin does not terminate, but will be continued by the donation of a site for the building and an increased allotment of light, heat, and power.

A building is needed because the Forest Products Laboratory has greatly outgrown the original building cooperatively provided by the University of Wisconsin in 1910. One-half of the Laboratory's work and personnel of 200 are now temporarily accommodated in three other university buildings; these cannot permanently be made available because the University is growing and will require them for other purposes.

Coincidentally, within a few years the Laboratory organization will be greatly increased in accordance with the McNary-McSweeney Forest Research Act, passed by Congress in 1928, which authorizes a further doubling of the Laboratory's work.

It is proposed that the U. S. Department of Agriculture erect a complete building for the Laboratory on land, aggregating 5-10 acres, to be donated by the University of Wisconsin; in lieu of the university buildings to be vacated by the Laboratory, the university will proportionately increase its contribution of light, heat, power, etc.

This plan has had the approval for some years both of the Governor of Wisconsin and of the Board of Regents and President of the University, and also of four Secretaries of Agriculture, Messrs. Hyde, Jardine, Wallace, and Meredith.

Carlile P. Winslow, director, states that "It is our hope that through the greater facilities that will soon be provided the Laboratory will be able to confirm and enlarge its contact with the forest-using public, and by an increasingly practical application of research to the problems of the wood producing and consuming industries may the more adequately fulfill the purposes for which it is maintained."

## PAPER PRODUCTION IN APRIL

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and co-operating organizations, paper production in April showed no change from March 1930, and a decrease of 7 per cent under April 1929. The total wood pulp production in April registered a decrease of 3 per cent under March 1930 and a decrease of 2 per cent under April 1929.

The April production of news print, paper board, wrapping, bag, writing, tissue, and building papers registered a decrease under April 1929 output. Hanging paper production showed a substantial increase in production over April 1929 while uncoated book paper production showed a moderate increase in production over April 1929.

News print, uncoated book, paper board, writing, tissue and hanging papers registered increases in inventory at the end of April 1930, as compared with the end of March 1930. As compared with April 1929 inventory, news print, wrapping, and bag papers showed decreases. The total stocks on hand for all grades was 5 per cent above March 1930, and 14 per cent above those of April 1929.

Identical pulp mill reports for April 1930, indicated that during April 1930, 10 per cent more mitscherlich pulp and 3 per cent more bleached sulphite pulp was consumed by the reporting mills than in April 1929. The total shipments to outside markets of all grades of pulp in April 1930, were 8 per cent below the total for April 1929.

Kraft and soda pulps were the only grades that showed decreases in inventory at the end of April as compared with the

end of March 1930. As compared with April 1929, ground wood and soda pulps registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF APRIL, 1930

| Grade | Production tons | Shipments tons | Stocks on hand end of month tons |
|---|---|---|---|
| News print | 109,967 | 109,346 | 24,546 |
| Book (uncoated) | 37,929 | 80,301 | 56,992 |
| Paper board | 192,165 | 189,633 | 62,357 |
| Wrapping | 47,901 | 48,700 | 44,978 |
| Bag | 14,297 | 14,303 | 6,749 |
| Writing, cover, etc. | 32,729 | 30,433 | 47,706 |
| Tissue | 12,850 | 11,870 | 9,859 |
| Hanging | 5,356 | 5,331 | 4,267 |
| Building | 6,090 | 6,383 | 4,697 |
| Other grades | 23,310 | 21,533 | 17,712 |
| Total—All grades | 532,594 | 517,833 | 279,863 |

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF APRIL, 1930

| Grade | Production tons | Used during month tons | Shipped during month tons | Stocks on hand end of month tons |
|---|---|---|---|---|
| Ground wood | 104,066 | 87,015 | 1,428 | 80,115 |
| Sulphite news grade | 35,487 | 32,778 | 2,064 | 8,503 |
| Sulphite bleached | 27,067 | 25,479 | 1,364 | 3,442 |
| Sulphite easy bleaching | 3,268 | 2,688 | 275 | 1,049 |
| Sulphite Mitscherlich | 7,777 | 6,587 | 1,141 | 1,069 |
| Kraft pulp | 32,032 | 26,734 | 5,444 | 8,332 |
| Soda pulp | 24,548 | 16,218 | 8,435 | 3,707 |
| Pulp—Other grades | 55 | ..... | 76 | 11 |
| Total—All grades | 234,300 | 197,499 | 20,227 | 106,228 |

## Patent Claims in Steam Drying Upheld

In the case of Earl E. Berry, versus Thomas E. Robertson, Commissioner of Patents, being a bill in equity to compel the Commissioner of Patents to allow claims in application for patent for steam drier in a paper making machine, Federal Judge Coleman, sitting at Baltimore, Md., gave notice that a decree would be entered in favor of the plaintiff for all of the eight claims embraced in the plaintiff's bill of complaint.

This was a suit in equity, brought pursuant to the provisions of section 4915 of the Revised Statutes (35 U. S. C. A. section 63), whereby the plaintiff sought to establish his right to a patent for a steam drier used in paper-making machinery in connection with the drying and bleaching of the paper. More specifically, the apparatus involves a hollow rotary drier or cylinder over which the paper sheet travels, the interior of the rotary drier or cylinder being constantly supplied with steam to keep the drier or cylinder hot so as to accomplish the drying function.

The Berry graphite steam joint, which is the device in issue, represents the connection between the cylinder or drier and the fixed member which forms an inlet for supplying the steam continuously to the rotary part. Between the flat surface of the cylinder or drier and the concave surface of the fixed member forming the steam inlet there is interposed a packing ring, consisting in whole or in part of carbon or graphite, or some composition of one or the other, or some material impregnated with one or the other, the object being to make the joint self-lubricating.

## Air Pollution Survey and Paper

A survey of the literature on atmospheric pollution has been completed by the Paper Section, Bureau of Standards, at Washington, D. C. No new ideas have been brought to light, but the importance of a knowledge of smoke and fume effects has been intensified. This study very sharply emphasizes these facts: atmospheric sulphur dioxide, resulting from the combustion of fuels, is ultimately changed to sulphuric acid, unquestionably a very destructive agent. Deteriorative action of this sulphuric acid upon building-stone, metals and vegetation is strongly emphasized, and a like action on papers is to be expected.

In the above study, statistics from fifteen American and European cities were compared. These showed air-pollutions ranging from 0.20 to 3.00 parts of atmospheric sulphur dioxide per million parts of air, and an annual precipitation (same as rainfall) of sulphuric acid averaging from 11 to 190 tons per square mile.

## TAPPI Notes

Sven Hanson, for some time with the Mead Pulp and Paper Company at Chillicothe, Ohio, has sailed for Finland taking a position as superintendent of the sulphite mill of Aug. Ekloef A.B, Tolkis, Finland.

Asbjorn Aasen, for several months with M. W. Kellogg in Jersey City, has sailed for Norway for a few months at least.

E. L. Lamb, formerly with the Scott Paper Company of Chester, Pa., has gone with the Oxford Paper Company at Rumford, Maine.

M. M. Rubin, formerly of the Chemical Paper Manufacturing Company of Holyoke, Mass., has joined the technical organization of the Fraser Companies, Ltd., Edmundston, N. B.

J. Benjamin Beck, for some time with the Lincoln Pulp and Paper Company of Merritton, is now with the E. B. Eddy Corporation of Hull, P. Q.

G. P. Graham is now at the Beauharnois mill of the Howard Smith Paper Mills after having been for some time at Cornwall, Ontario.

J. Ellis Taylor has gone with the Fraser Companies at Athol, P. Q., after having been with the Howard Smith Paper Mills for several years.

At the summer meeting of the Canadian Technical Section at Ottawa, F. L. Mitchell, assistant manager of operations of the Abitibi Power and Paper Company, was the recipient of the Weldon medal, which is presented by the Canadian Association each year to the member submitting a paper at the annual meeting of the most outstanding merit.

## New TAPPI Contributing Members

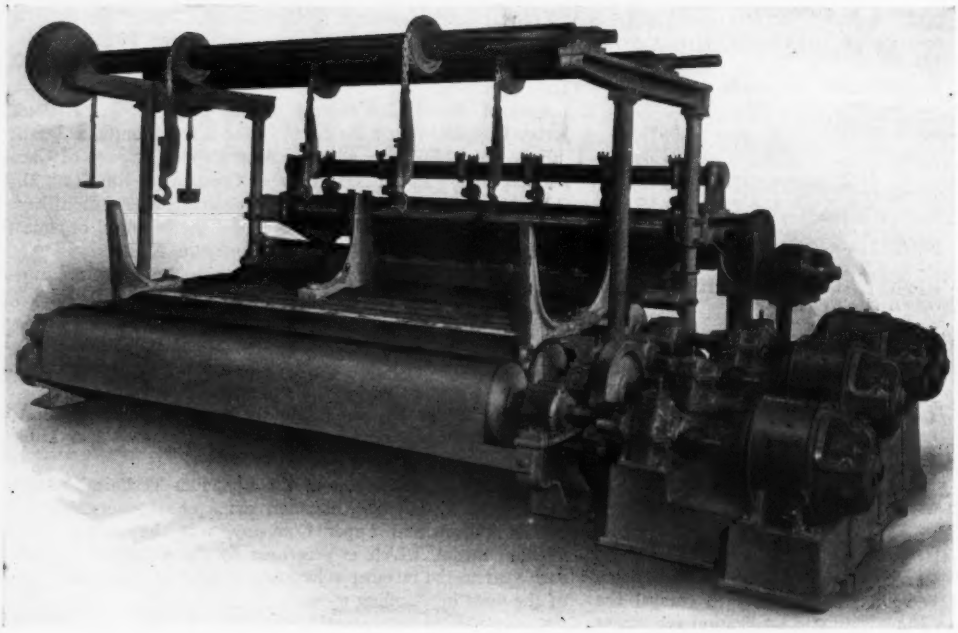
The following firms have recently become contributing members of the Technical Association of the Pulp and Paper Industry:

Foxboro Company, Foxboro, Mass.
Moore & White Company, Philadelphia, Pa.
R. T. Vanderbilt Company, New York, N. Y.
Pulp Bleaching Corporation, New York, N. Y.
Walworth Company, Boston, Mass.
Paper Makers Chemical Corporation, Kalamazoo, Mich.
Dilts Machine Company, Fulton, N. Y.
Stanco Inc., New York, N. Y.
Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.
The Dorr Company, New York, N. Y.
Foreign Paper Mills, New York, N. Y.
Norton Company, Worcester, Mass.
International Nickel Company, New York, N. Y.
The Texas Company, New York, N. Y.

Forty of the leading equipment and chemical supply companies that have been closely identified with the paper industry have become members of the Technical Association of the Pulp and Paper Industry during the past few months. It is expected that most of the important companies serving the industry will be members of TAPPI before the end of 1930.

## Amalgamated Paper Co. Busy

FORT EDWARD, N. Y., June 16, 1930.—The plant of the Amalgamated Paper Company is now running with night shift in order to care for the large increase in orders. The company recently removed the entire equipment of its Brooklyn factory to this village and the change has proved beneficial inasmuch as it receives its raw material supply from the International Paper Company. The new plant recently built here is of the most modern type of mill construction and conforms to the convenience of the employees in every respect. The placing of the twenty-four hour schedule in effect this week was brought about through the receipt of large contracts for school tablets. The company is now employing about 75 hands and indications are that this number will be increased.



The counter-weighted lifting hooks are required only to equalize soft ends, not to reduce roll hardness.

# The M & W Electric Drive is Flexible

THE difference between belt and electric drive for drum winders resembles that between cable cars and trolley cars.

A cable car runs at the speed of the cable. It can run slower only by slipping the cable grip. But a trolley car runs at any speed fixed by the controller and the load. Going uphill, the motor automatically pulls harder.

In drum winding, the second or "variable" drum must pull a trifle harder than the "constant" drum, in order to draw the paper snug. With belt drive, that can be done only by increasing the speed of the "variable" drum. That creates an actual slip between the drum and the rolls; and with heavy rolls the resulting frictional pull tends to cause excessive roll hardness.

With each drum separately and flexibly driven by an electric motor, the "variable" drum is given, not an actual slip, but merely the slight added tension and "creep" required to draw the paper snug. It is like the uphill pull of the trolley motor.

In the M & W Electric Drive this extra pull of the "variable" drum is self-regulated. As the roll size increases, the hardness is automatically reduced to just the slight degree needed to make perfect rolls.

**Shall we send the new Winder Bulletin?**

***YES, we still build belt-driven Winders — and good ones! But we consider the Electric Drive a long step forward.***

**THE MOORE & WHITE COMPANY**
*Established 1885*
**15th ST. & LEHIGH AVE. PHILADELPHIA, PA.**

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

# Colloid Chemistry In The Paper Industry *

By Leo Friedmann[1]

Colloid chemistry can be defined as that branch of Chemistry which deals with systems in which the surface is the most important factor in determining the properties.

Since most of the properties of paper are due to its surface characteristics and the surface characteristics of the particles of pulp, clay and size which go to make it up, paper is an almost ideal example of a colloidal system. To study paper is to study surface properties. In addition, the fact must not be overlooked that the biggest constituent of paper is a jelly, namely, pulp.

Possibly the title of this paper should be a little different, for in looking over the field, I find that the young science has not contributed a great deal yet, but I am enthusiastic about the possibilities during the next ten years. In the following discussion book paper is considered primarily, the applications go over into the manufacture of all kinds of paper.

Book paper consists of sulphite pulp (bleached or unbleached), groundwood or soda pulp, clay, or other filler such as chalk or heavy spar, and usually some rosin or silicate size. I shall discuss briefly the constituents that make up this paper and the part that colloidal study can play in this treatment.

### Sulphite Pulp

Sulphite, of course, is made by cooking the chips with a solution of calcium hydroxide, sulphur dioxide, and water, and the resulting mixture of compounds and ions. When it first comes from the digester, it contains a small amount of lignin compounds which give it considerable brown color and influence its properties to a considerable extent. This pulp is rather opaque, quite strong, and has some other desirable properties in the making of paper, but it usually does not take rosin size very well. At any rate it does not take rosin size uniformly. Why this characteristic exists is not certain, but it is quite probably due to low absorbing properties of the lignin or to a layer of pitch which is not efficiently removed in the sulphite process. Bleaching to remove the lignin or treating the pulp to remove the pitch makes a decided difference in the tendency of the pulp to take rosin size.

### Hydration of Pulp

Studies of the surface properties of the pulp such as heat of wetting or heat of swelling of the pulp in water or adsorption of anions and cations from water solution and the conditions of hydrogen ion concentration which influence the absorption of these ions by the surface of this pulp may serve as a means of characterizing the pulp prior to the time the pulp is to be used. The heat of wetting and heat of swelling of pulp are probably closely related with the tendency of the pulps to hydrate in the beater. A knowledge of the heat of swelling of the pulp prior to the time the pulp is to be used would probably give one an index as to the treatment the pulp might be given, such as with a rod mill or pre-beater, prior to the time it is put into the beater to be mixed with other constituents of the paper. If the pulp is slow to hydrate it could be treated more drastically than a pulp, possibly from the next cook, which was easy to hydrate.

### Clay

The finish of paper is to a large extent due to the character of the clay used as filler. This is probably more important in this characteristic than the ground wood. It also has a pronounced influence upon opacity of the sheet. It also has a very important influence upon the life of the machine wire and the surface of the suction boxes. The finish obtained with a certain clay depends to a considerable extent upon the moisture in the sheet at the time of supercalendering. In a dry sheet it is chalky and powdery. In a sheet which is too wet the supercalenders form transparent spots or cause blackening of the sheet. The surface moisture of the clay apparently determines whether the clay is going to pack under the pressure of the supercalender rolls to give a spot with no air spaces between the clay and fiber particles or whether the other extreme is to be obtained in which the particles do not stick together.

Different clays give different finish and opacity at the same moisture content. This is probably due largely to particle size or to distribution of particle size, for clays with a large portion of large grains do not give good finish or high opacity. One of the tests to be conducted on a clay which is being considered for paper filler should be analysis for size of particles and for distribution of size of particle.

Retention of clay on the machine is largely a colloidal phenomenon. It is for the most part dependent upon the flocculation of alum or aluminum hydroxide. I am satisfied that it is not so much a matter of ionic behavior. It matters little whether the pulp is negative or positive or whether the clay is negative or positive. It is almost entirely a matter of whether or not the alum is hydrolyzed and the aluminum hydroxide flocculated. If the later is flocculated in the presence of the clay, the clay is going to be occulded in it. If this flocculation action is completed before the stock goes onto the wire, but not so far before it goes onto the wire as to have the flocculate torn to pieces by violent treatment such as in jordans and high speed centrifugal pumps, the best retention of clay will be obtained. It is better to have the flocculation take place on the acid side of the pH 5.5 than on the alkaline side, for the sheet is freer and the white water formed from the stock is more readily settled.

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* Presented at the meeting of the Pacific Section of TAPPI, Longview, Wash., April 5, 1930.

[1] Professor, Dept. of Chemistry, Univ. of Oregon, Eugene, Ore.

### Sizing

Sizing is largely a colloidal phenomenon. The desirable condition in sizing is that of obtaining a uniform coating of the sizing material on the outside of the clay and fiber. One must be sure that the size has time to be uniformly and thoroughly dispersed through the paper stock before the alum is added. To accomplish this the stock in the beater must be above pH 7.0 during the time the size is being added. If it is below 6.0 the size will curdle at the time it is added. This curdled size is largely wasted, for though it may be retained in the sheet it has little or no influence upon the properties of particles of clay and fiber, except a few which happen to be on its surface. A few pounds of size properly dispersed in the stock before being set is of more value than ten times this amount of size which has not been uniformly dispersed through the stock.

### A Difficult Problem

Some pulps size readily while others do not. This problem is a difficult one, but I am convinced that the solution lies in a knowledge of the surface condition of the fiber and in a knowledge of the conditions for setting the size. Possibly the mixing of the rosin size with water glass, which is sometimes used as a size, will be an aid to improving sizing. It should do two things. It should insure an alkaline stock at the time the size is brought into contact with the stock and it should serve as a gel to assist in retaining the size in a fine degree of subdivision on the surface of the fiber. It should also improve the retention of the clay, and it should give the paper a desirable rattle. Of course, the use of this should be carefully worked out, for the addition of too much or the addition of the right amount in the wrong way might lead to very unsatisfactory results.

### Pitch Trouble

Pitch trouble is closely associated with sizing troubles. It is not definitely known whether the so called pitch which collects on the paper machine comes from the wood or is largely the rosin from the size. Certainly most trouble occurs when there is sizing trouble. Which is the cause and which the effect is hard to say, but it is surely a colloidal problem. It strikes me that it will come from either improving or altering the cooking process or pre-treatment of pulp so as to decrease the amount of pitch in the pulp, or to determine the proper conditions for setting the size. Possibly it will be a combination of both.

### White Water Recovery

The recovery of suspended matter in white water and the clarification of water coming into the plant is a colloidal problem. This has been largely solved by the application of colloids to the study of the flocculation of aluminum hydroxide. The optimum flocculation of aluminum hydroxide is at pH 5.5. At this pH value the residual alum in solution is hardly detectable. The aluminum hydroxide in flocculating catches suspended clay and other relative coarse suspensions and drags them together in the flocculate. Regulation of the acidity of the system to give this pH gives the best results in the removal of coarse suspended matter. Coloring matter, however, or other highly dispersed material with a negative charge is not so easily caught in the flocculate. It must be adsorbed. The clay and coarse suspended matter is too large to be much influenced by adsorption. The adsorption of these negatively charged dispensions is influenced to a marked extent by the pH. At low pH values the adsorption of negatively charged ions and colloidally dispersed substances is higher than at higher pH values. Hence, if a river water contains yellow coloring matter from the swamps the removal is accomplished at pH 5.5 or 5.0 much more effectively than at pH 7.0 even though the volume of flocculate formed is not so markedly different.

It is only recently that some of the leading water works chemists have come to realize this.

## Chip Screen Operating Data

SPECIAL INQUIRY No. 145

A member writes: "There is a great deal of doubt in my mind regarding the best type of chip screen. I would particularly like to know the following:

1. Type and make of screen used. (rotary or reciprocating)
2. Number of trays.
3. Size of the openings in each tray.
4. Speed (number of vibrations per minute).
5. Length of throw (if it is a reciprocating screen).
6. Angle of inclination.
7. Horsepower per cord of wood (in chips).
8. Cords screened per square foot per hour.
9. Amount of sawdust in chips before and after screening (based on test).
10. Percentage of good chips sent to crusher."

It is hoped that a large amount of mill test data will be contributed to this inquiry so that the report which will be sent to all those contributing, may be representative of the industry at large. Send replies to Secretary of TAPPI, 18 East 41 street, New York, N. Y.

## Granite or Brass Top First Press Rolls

SPECIAL INQUIRY No. 146

A member writes: "What would be the particular advantage of using a top granite press roll on the first press, in place of a brass roll, especially in the following case:

"We are occasionally troubled with stock sticking to the first press, when all conditions are correct for smooth running. This happens on light weight kraft papers, with a light sizing, and stock fairly slow, and slightly acid on the wire. Thirty and forty pound paper gives trouble, while the same stock on fifty pound paper does not stick.

"The brass roll is slightly pencilled, but not seemingly enough to cause trouble.

"Would the granite roll help eliminate the sticking trouble?

"We would welcome any information anyone could give us on the relative merits of granite and metal press rolls, for kraft papers, particularly in respect to the problem outlined."

If you are not able to answer this inquiry please pass it along to someone who can. The information compiled as a result of this inquiry will be distributed among those responding. Send replies to Secretary of TAPPI, 18 East 41 street, New York, N. Y.

## Paper Coating Machine Difficulty

SPECIAL INQUIRY No. 149

A member writes: "We are having trouble with color lumps flying on to the coated paper, at the wet end of the coating machines. These color lumps come from the whippers and suction aprons.

"We have all single coaters and find that on the back side of the sheet the color works under for a distance of one eighth to one quarter of an inch. It is this color on the under side of the sheet that accumulates on the whippers and suction aprons.

"The whippers and suction aprons are cleaned every hour. Wipers are used on the color rolls so that the coating is fed to the cylinder brush to the width of the sheet we are running. Sponges are placed on the machine apron and kept wet where no paper is running, so that the flat brushes will not get hard and cause lumps. In spite of all this and many other things we have tried, we still get color lumps on the paper.

"We would by very glad to hear from others who have had this same trouble and overcome it."

Transcripts in blank, will be sent to all those replying to this inquiry. Send replies to the Secretary of TAPPI, 18 East 41 street, New York, N. Y.

# The Neutral Sulphite Pulping Process*

## II. Effect on Yield, Chemical Properties, and Color of Pulps Produced by Changing the Ratio of Sodium Sulphite to Sodium Bicarbonate in the Cooking Liquor

By Mark W. Bray[1] and Paul R. Eastwood[2]

In 1926 the Forest Products Laboratory announced a new pulping process (*19*)[4] involving the use of essentially neutral pulping re-agents and combining chemical action with mechanical disintegration of the softened wood substance to obtain a product of commercial value. The new process is known either as the "neutral sulphite" or the "semi-chemical" process; the second term is the more widely used but is less descriptive than the first. The re-agents used are sodium sulphite and sodium bicarbonate and, as noted, the reaction mixture is practically neutral.

The new process is distinct from the older chemical pulping methods, which employ either strongly acid or strongly alkaline reagents. It, however, is more or less an outgrowth of fundamental studies (*1, 8, 13, 14, 15, 23, 25*) of these older processes, systematically followed, with the object of determining the nature of the pulping reaction in precise physical and chemical terms.

The commercial development of the neutral sulphite method has been very rapid and has preceded considerably a desirable extension of knowledge regarding it. The preliminary investigations were largely on a semi-commercial scale of operation in which 100 pounds or more of wood is used for a digester charge. While these experiments yielded data of much value in the subsequent commercial application of the process they do not permit the precise control afforded by apparatus of ordinary laboratory size in which each independent pulping variable may be placed under investigation separately. The value of research of the small-scale type has been demonstrated not only in the results recently published by the Forest Products Laboratory (*5, 6, 7, 16, 20*) but also in connection with investigations carried on by other institutions both in this country (*9, 10*) *and abroad* (*2, 24*),

The work presented here was designed primarily to determine some of the chemical and physical principles underlying the pulping of wood by means of neutral agents. In this work it is expected to trace the effect of several of the independent variables of pulping on the rate of the reaction, the yield, and some of the chemical and physical properties of the resulting pulps, for the purpose of gaining information for application in the control of pulping reactions of this type.

### Materials

#### Preparation

An 8-foot log of freshly cut, sound black gum (*Nyssa sylvatica*) was ground to pass a standard sieve of 40 meshes to the inch and to be retained on one of 60 meshes. The small particles of iron that came from the mill during the grinding operation were removed magnetically.

#### Chemical analysis (*3*)

Upon analysis, the 40 to 60 mesh sawdust showed the characteristics recorded in Table 1. All percentages, except the two indicated, are based on the weight of the oven-dry wood.

TABLE 1
RESULTS OF THE CHEMICAL ANALYSIS OF BLACK GUM (NYSSA SYLVATICA)

| | Per cent |
|---|---|
| Lignin | 28.6 |
| Total cellulose | 57.9 |
| Alpha-cellulose (based on weight of cellulose) | 73.3 |
| Alpha-cellulose | 42.5 |
| Pentosan-free cellulose | 45.2 |
| Total pentosans | 20.8 |
| Pentosans in the cellulose (based on weight of cellulose) | 22.0 |
| Pentosans in the cellulose | 12.7 |
| Pentosans not in the cellulose | 8.1 |
| Solubility in hot water | 4.4 |
| Solubility in alcohol-benzene mixture | 3.4 |
| Solubility in ether | 0.3 |
| Total chlorine consumed in the isolation of the cellulose | 34.0 |

#### Preparation and analysis of cooking liquors

The cooking liquors, with varying ratios of sodium sulphite to sodium bicarbonate, were prepared by dissolving sodium bisulphite in water and partially neutralizing it with a solution of sodium hydroxide. To the resulting solution, sodium bicarbonate solution was added in approximately the correct proportion to obtain the desired ratio of sulphite to bicarbonate. The cooking liquor was finally adjusted a few minutes before the digestion by adding one or more of the three constituents of the solution, namely, water, sodium bisulphite, or sodium bicarbonate, until the total chemical content was 50 grams per liter.

The neutral cooking liquor, commonly called white liquor, was analyzed for its sodium sulphite and sodium bicarbonate content in the following manner: A 25 cc. portion of the liquor was diluted with distilled water to 250 cc. in a graduated flask, and a 20 cc. aliquot part, representing 2 cc. of the original solution, was titrated directly with a standard solution of iodine. From the results of this titration the concentration of the sodium sulphite was obtained. The concentration of the bicarbonate was determined by acidifying the solution, after titration with iodine, with one-tenth normal sulphuric acid solution and then heating to expel the carbon doixide. To the cooled solution a known amount of standard sodium hydroxide solution containing barium chloride was added, and the excess was titrated back with standard sulphuric acid. The concentration of the sodium bicarbonate, obtained from the titration, is expressed in terms of sodium carbonate throughout this article.

When sodium sulphite only was used as the pulping agent, a strong solution of sodium bisulphite was prepared, neutralized with sodium hydroxide using phenolphthalein as the indicator, and diluted until the concentration of the sodium sulphite was 50 grams per liter.

For the other extreme, in which sodium bicarbonate only was the pulping agent, the liquor was prepared by mixing a predetermined amount of sodium bicarbonate with the sawdust to give a concentration of sodium bicarbonate, calculated as sodium carbonate, equal to 50 grams per liter when 125 cc. of distilled water was added to the mixture.

### Digestion Apparatus

For the pulping reactions, the small steel autoclave of 350 cc. capacity and the electrically heated thermostatically controlled oil bath for heating the autoclave that have been employed in similar experiments previously reported upon (*5*) were used. A complete description of the autoclave and the methods for operating the thermostat have been published (*5*).

### Experimental Procedure

A 25-gram sample of black gum sawdust, previously dried for 16 hours at 105 deg. C., was introduced into the autoclave with



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* Presented at the annual meeting of TAPPI, Pennsylvania Hotel, New York, N. Y., Feb. 20, 1930.

[1] Member TAPPI; Chemist, U. S. Forest Products Laboratory, Madison, Wis.

[2] Junior chemist, U. S. Forest Products Laboratory, Madison, Wis.

The authors acknowledge the suggestions and guidance of C. C. Heritage, formerly in charge, Section of Pulp and Paper, C. E. Curran, in charge, Section of Pulp and Paper, U. S. Forest Products Laboratory, Madison, Wis., and O. A. Hougen, Professor of Chemical Engineering, and F. Daniels, Professor of Chemistry, University of Wisconsin, Madison, Wis.

Part of a thesis submitted by P. R. Eastwood to the graduate school of the University of Wisconsin in partial fulfilment of the requirements for the degree of Master of Science.

The first paper of this series is "Chemical Studies on the Pulping of Aspen," by F. G. Rawling and J. A. Staidl. Paper Ind. 7, 901 (1925).

[4] Reference is made by number (italic) to "Literature cited," given at the end of the article.

125 cc. of cooking liquor analyzing 50 grams of total chemical per liter. Thus the ratio of the chemical sodium sulphite and sodium bicarbonate to the weight of the oven-dry wood was 0.25. The autoclave was closed immediately after the introduction of the charge and was placed in the oil bath, when the bath had reached a temperature 10 degrees higher than that desired for cooking. The oil bath was so regulated that the time required to bring the autoclave to the maximum temperature was practically the same for each digestion.

At the end of the predetermined cooking period the pulp was separated from the spent liquor by filtration in a Buchner funnel, was washed with hot water, with dilute acetic acid, and then with 3 to 4 liters of hot water. A 25 cc. sample of the original spent liquor was diluted to 250 cc. in a graduated flask, and a 20 cc. aliquot part was taken for the analysis. Thus the analysis was made upon a 2 cc. sample of the original spent liquor. The method of analysis was the same as that used for the white liquor.

### Analysis of Fibrous Residue

The fibrous residue or pulp was subjected to chemical analysis in which lignin (*17, 21*), cellulose (*11, 4*), alpha-cellulose (*21*), total pentosans (*22*), the pentosans in the cellulose (*22*), and the chlorine consumed in the isolation of the cellulose (*4, 18*) were determined in accordance with the methods adopted at the Forest Products Laboratory (*3*).

### Description of the Tests

In order to gain an idea of the change in the rate of the pulping reaction with a change in the ratio of sodium sulphite to sodium bicarbonate and also the changes in the chemical properties of the fibrous residue resulting from the delignification, six series of pulping tests, consisting of three to four digestions each, were made, using a ratio of sodium sulphite to sodium bicarbonate (the $NaHCO_3$ was calculated as $Na_2CO_3$) as follows: 4 to 1, 3 to 1, 2 to 1, 1 to 1, and with sodium sulphite only and sodium bicarbonate only. Throughout all the tests, for any given ratio of sodium sulphite to sodium bicarbonate, the conditions of treatment, namely, concentration of total chemical (50 grams per liter), volume of liquor (125 cc.), and ratio of chemical to wood (25 per cent of the weight of the oven-dry wood), were maintained constant. The time of digestion alone was varied.

Periods of digestion were successively lengthened in the experiments at each ratio of sodium sulphite to sodium bicarbonate in order to afford a view of the reaction as it progressed. The time of digestion was read from the moment the autoclave was immersed in the oil bath until it was removed at the end of the cooking period.

### Discussion of Results

Figure 1 is a graphical representation of the results (recorded in Table 2) of the pulping experiments, in which all percentages are based on the weight of the oven-dry wood charged. In this figure, to facilitate visualization of the results, the data for each ratio of sodium sulphite to sodium bicarbonate are recorded against time of pulping.

#### Yield

As pointed out in previous publications the yield of pulp decreases with time of pulping, regardless of the ratio of sodium sulphite to sodium bicarbonate used in the cooking liquor. The yield data, illustrated in Figs. 1 and 2, indicate also that the substitution of sodium bicarbonate for a part of the sodium sulphite increases the rate of the pulping reaction during the initial stages of pulping, namely, the first two hours, or until the concentration of the sulphite has reached a value of approximately 8 to 10 grams per liter. Beyond this point, even to the end of the 8-hour cooking period, larger yields of fibrous residues remained as the proportion of sodium bicarbonate was increased by replacement of the sulphite in the cooking liquor.

#### Chemical Consumption

In accordance with the yield data during the first few hours of pulping, the consumption of chemical and therefore the rate of the reaction for equal time intervals increased with the substitution of bicarbonate for sulphite. This is probably due to the fact that carbon dioxide is given off at the elevated temperatures of pulping employed, causing the cooking liquor to shift from a neutral to a slightly alkaline medium. Although the total consumption of chemical in every case is greater for the longer than for the shorter periods of digestion, the relative amounts of chemical consumed during the long periods, as shown in Figures 1 and 3, decreases as sulphite is replaced with bicarbonate.

When using sodium bicarbonate as the pulping agent the cooking liquor was saturated at all times with this chemical and therefore the consumption of chemical appeared to be constant regardless of the time of digestion. Because of this, the concentration of chemical in the spent liquor was constant at any period of

TABLE 2.—THE EFFECT ON THE YIELD AND THE CHEMICAL PROPERTIES OF PULPS PRODUCED BY CHANGING THE RATIO OF SODIUM SULPHITE TO SODIUM BICARBONATE IN THE COOKING LIQUOR. TEMPERATURE CONSTANT AT 170 DEG. C.

| Digestion conditions | | | | Results of digestion | | | Analysis of pulps based on oven-dry weight of wood | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Cellulose | | | Pentosans | | |
| Digestion No. | Total hours of digestion | Ratio $Na_2SO_3$ to $NaHCO_3$ calculated as $Na_2CO_3$ | Oven-dry weight of wood Grams | Average dry weight of residue Grams | Yield of pulp Per cent | Total chemical consumed Grams | Chlorine consumed Per cent | Lignin Per cent | Total Per cent | Pentosan free Per cent | Alpha cellulose Per cent | Total Per cent | In cellulose Per cent | Not in cellulose Per cent |
| Sample of wood | Hours | | | | | | 34.00 | 28.60 | 57.90 | 45.15 | 42.50 | 20.75 | 12.74 | 8.01 |
| 202 | 1 | $Na_2SO_3$ only | 25.2630 | 19.4070 | 76.82 | 1.37 | 29.30 | 15.91 | 54.20 | 43.12 | 41.25 | 13.95 | 11.08 | 2.87 |
| 203 | 2 | do. | 25.1695 | 17.9535 | 71.34 | 2.26 | 23.20 | 14.75 | 51.70 | 41.11 | 38.70 | 13.20 | 10.59 | 2.61 |
| 201 | 4 | do. | 25.1980 | 16.4400 | 65.25 | 3.50 | 19.60 | 9.65 | 49.50 | 40.75 | 33.40 | 12.40 | 8.75 | 3.65 |
| 204 | 8 | do. | 25.2210 | 14.5705 | 57.77 | 5.39 | 18.00 | 7.00 | 46.60 | 38.54 | 30.20 | 10.90 | 8.06 | 2.84 |
| 240 | 1 | 4 | 25.3535 | 19.0860 | 75.28 | 2.71 | 29.40 | 18.36 | 49.80 | 40.57 | 35.35 | 13.40 | 9.23 | 4.17 |
| 242 | 2 | 4 | 25.2690 | 17.7055 | 70.07 | 3.68 | .... | 15.43 | ..... | .... | .... | 13.04 | .... | .... |
| 241 | 4 | 4 | 25.3310 | 16.5425 | 65.30 | 4.48 | 19.72 | 11.62 | 49.50 | 40.99 | 43.10 | 12.15 | 8.51 | 3.64 |
| 239 | 8 | 4 | 25.3475 | 15.1640 | 59.82 | ... | 19.70 | 7.87 | 47.90 | 39.67 | 33.20 | 11.82 | 8.23 | 3.59 |
| 205 | 1 | 3 | 25.2570 | 18.7435 | 74.21 | 3.24 | 35.00 | 15.65 | 53.40 | 42.30 | 40.70 | 13.37 | 11.10 | 2.27 |
| 207 | 2 | 3 | 25.1270 | 17.6350 | 70.18 | 3.52 | 34.00 | 13.50 | 52.20 | 41.84 | 40.70 | 12.22 | 10.36 | 1.86 |
| 206 | 4 | 3 | 25.1470 | 16.3940 | 65.20 | 4.10 | 29.40 | 10.85 | 52.10 | 40.84 | 40.75 | 12.35 | 11.26 | 1.09 |
| 208 | 8 | 3 | 25.1860 | 14.9210 | 59.24 | 4.55 | .... | 7.71 | 50.85 | 41.04 | 40.10 | 11.38 | 9.81 | 1.57 |
| 209 | 1 | 2 | 25.0270 | 18.2950 | 73.10 | 2.99 | 34.00 | 14.43 | 52.40 | 43.01 | 39.00 | 13.52 | 9.39 | 4.13 |
| 211 | 2 | 2 | 25.0745 | 17.5960 | 70.17 | 3.51 | 33.60 | 13.60 | 52.00 | 43.29 | 41.10 | 13.14 | 8.71 | 4.43 |
| 210 | 4 | 2 | 25.0945 | 16.5250 | 65.85 | 4.11 | 30.00 | 11.93 | .... | .... | .... | 12.18 | 8.10 | 4.08 |
| 215 | 1 | 1 | 25.1340 | 18.7375 | 74.50 | 2.84 | 34.00 | 16.78 | 55.00 | 42.80 | 41.80 | 12.95 | 12.20 | 0.75 |
| 213 | 2 | 1 | 25.0860 | 17.6625 | 70.41 | 2.97 | 34.30 | 14.87 | 54.10 | 41.92 | 42.30 | 12.96 | 12.18 | 0.78 |
| 214 | 4 | 1 | 25.1895 | 16.8445 | 66.87 | 3.29 | 32.60 | 13.50 | 52.40 | 41.80 | 41.00 | 12.58 | 10.60 | 1.98 |
| 212 | 8 | 1 | 25.1005 | 16.2045 | 64.56 | 3.92 | 32.20 | 13.55 | 50.40 | 40.74 | 40.40 | 11.12 | 9.66 | 1.46 |
| 250 | 1 | $NaHCO_3$ only | 25.2210 | 20.0950 | 79.67 | 3.72 | .... | 24.35 | 52.60 | .... | 39.90 | 13.80 | .... | .... |
| 251 | 4 | do. | 25.2725 | 19.2485 | 76.15 | 3.69 | .... | 23.68 | 51.00 | .... | 40.00 | 13.10 | ... | ... |
| 249 | 8 | do. | 25.2360 | 18.8515 | 74.70 | 3.69 | .... | 23.30 | 49.90 | .... | 39.90 | 12.10 | ... | ... |

digestion studied. The bicarbonate reaction is exceedingly slow in comparison with that of the sulphite reaction.

### Color

The colors of the pulps obtained from the first digestions, when samples of the pulps had been dried in an oven at 105° C., did not follow a general schematic arrangement; hence it was necessary to duplicate the digestions in a further attempt to secure rational data on the question of which major variables control final pulp color.

Several additional digestions were made and the resulting pulps were washed thoroughly. Five small hand sheets were then prepared from each pulp, and the five sheets of each set were dried respectively by the five methods tabulated below:

(a) On a steam plate.
(b) In an oven at 105 deg. C.
(c) In a horizontal position in a room at 25 deg. C.
(d) In a vertical position in a room at 25 deg. C.
(e) On a flat surface, with a fan to increase the rate of drying at 25 deg. C.

The results of these repeat digestions indicate that the colors of the hand sheets are affected by thoroughness of washing and rate of drying. As would be expected, the slower the rate of drying, the darker the color of the sheets.

Method (e) was adopted as standard in these experiments because both sides of the sheet dried more uniformly than with any other method. In addition both sides of the sheet gave approximately the same color readings and these readings could be duplicated with a fair degree of accuracy.

Table 3 shows the relation among duration of pulping, ratio of sodium sulphite to sodium bicarbonate, and the numerical values for color obtained from the Ives tint photometer.

TABLE 3
COMPARISON OF THE IVES COLOR MEASUREMENTS ON SEMI-CHEMICAL PULPS PRODUCED UNDER VARIOUS COOKING CONDITIONS

| Digestion No. | Time of digestion Hours | Ratio of $Na_2SO_3$ to $Na_2CO_3$ | Ives color readings | | |
|---|---|---|---|---|---|
| | | | Red Parts | Green Parts | Blue Parts |
| 224 | 1 | $Na_2SO_3$ only | 73 | 67 | 53 |
| 225 | 4 | do. | 81 | 71 | 61 |
| 226 | 8 | do. | 78 | 66 | 60 |
| 227 | 2 | 4 | 75 | 66 | 56 |
| 228 | 4 | 4 | 77 | 64 | 58 |
| 230 | 2 | 3 | 75 | 64 | 55 |
| 229 | 4 | 3 | 77 | 63 | 56 |
| 231 | 2 | 2 | 78 | 66 | 53 |
| 232 | 4 | 2 | 74 | 61 | 50 |
| 3350* | 8½ | .. | 79 | 67 | 62 |
| 3304** | ... | .. | 79 | 70 | 66 |

* Semi-commercial unbleached spruce sulphite pulp.
** Semi-commercial unbleached black gum sulphite pulp.

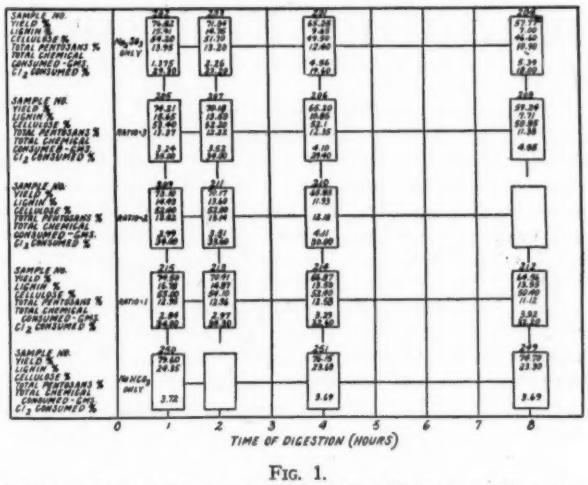


Fig. 1.
**Relation of Time of Digestion to Other Pulping Variables, for Black Gum, in the Semi-Chemical Process.**

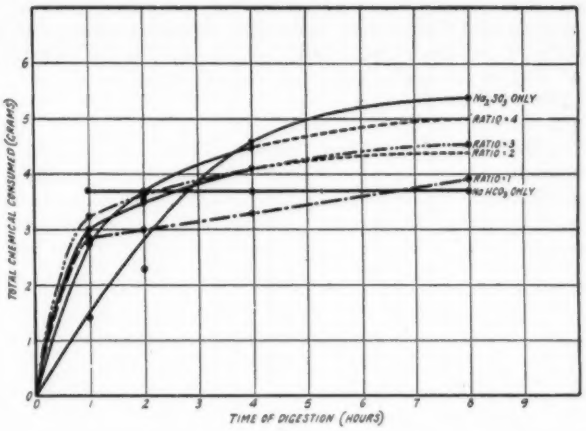


Fig. 2.
**Rate of Decomposition of Wood in Pulping Black Gum by the Semi-Chemical Process.**

In pulping on a commercial scale, the hydrogen-ion concentration of the cooking liquor can be lowered by relieving the pressure in the digester that results from the generation of carbon dioxide. This relief of gas causes bicarbonate to be decomposed to carbonate. Such a shift in the hydrogen-ion concentration toward a more alkaline solution results in pulps of darker color than those produced with a neutral cooking liquor.

The autoclave pulps digested with sodium bicarbonate only were a chocolate brown in color.

### Corrosion of the Digester

Sodium sulphite, when used as the sole pulping agent, caused considerable corrosion of the steel autoclave in which the digestions were made. The rate of corrosion decreased as sodium bicarbonate was substituted for an equal part by weight of the sodium sulphite. The use of a pulping agent with a ratio of sodium sulphite to sodium carbonate of 3 to 1 caused no appreciable corrosive effects upon the autoclave.

From the standpoint of both corrosion and color, the data obtained thus far for the 4-hour pulping period indicate that

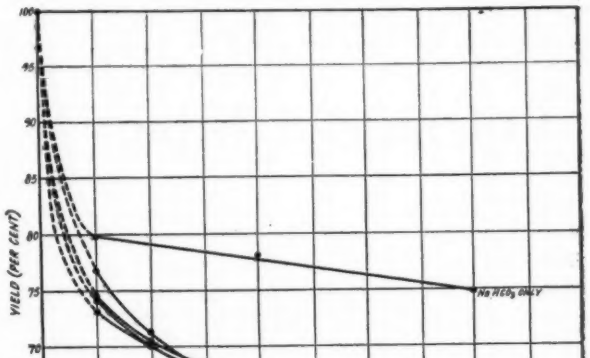


Fig. 3.
**Rate of Consumption of Chemical in Pulping Black Gum by the Semi-Chemical Process.**

the most practical ratio of sulphite to bicarbonate (calculated as carbonate) for commercial digestion is approximately 3 to 1. Ratios above this amount hasten corrosion of the steel digester, while those below result in pulps of inferior color.

Although the change in color of the sheets produced by digesting with decreasing ratios of sulphite to bicarbonate for the four-hour periods was gradual, pulps of darker color, containing less blue, were obtained with the lower ratios of sulphite to bicarbonate. Thus the hydrogen-ion concentration of the cooking liquor may be directly correlated with the color of the washed and dried pulps.

### Chemical Properties of the Pulps

#### Cellulose

As shown in Table 2 the rate of decomposition of the cellulose for a given period of pulping was greater in the first series, where sodium sulphite only was the pulping agent, than in any of the series where sulphite was partly replaced with bicarbonate. As would be expected from the preceding results, this same phenomenon was exhibited with the alpha-cellulose. Cooking liquor composed of sodium sulphite alone appeared to attack the alpha-cellulose content of the cellulose to a greater extent that the liquors containing bicarbonate. This is probably due to the fact that the acids formed during pulping are removed from the sphere of the reaction with bicarbonate. At the end of the 8-hour cooking period of the first series, the alpha-cellulose had decreased 10 per cent from that of the 1-hour period. For the series other than the first, however, the decrease in the alpha-cellulose values with time of digestion was considerably smaller in magnitude, being only 1 to 2 per cent for the same pulping interval. Upon replacing part of the sodium sulphite with sodium bicarbonate the percentage of alpha cellulose remained practically the same at the first hour of pulping regardless of the ratio of the reagents (sodium sulphite and sodium bicarbonate) used in the cooking liquor.

#### Lignin

The rate of removal of lignin and of substances other than cellulose during pulping was much greater than the rate of decomposition of cellulose. The rate of lignin removal was greatest during the first two hours of pulping. As the reaction proceeded beyond this time, in the different series, the lignin removal proceeded more slowly. Comparing the results at the end of the 8-hours periods, the data showed that the removal of lignin decreased as sodium sulphite was replaced by sodium bicarbonate. For other periods of digestion, such as 1 hour, 2 hours, and 4 hours, the value of 3 to 1 for the ratio of sodium sulphite to sodium bicarbonate appeared to show the greatest rate of lignin removal.

#### Total pentosans

The black gum used contained 20.75 per cent of pentosans. Approximately 35 per cent of the total amount of this substance present was removed during the first hour of pulping in contrast to the removal of 48 per cent for the 8-hour digestion period. The ratio of sulphite to bicarbonate in the cooking liquor had but little effect on the rate of removal of the pentosans. For example, the fraction of the pentosans remaining in the fibrous residue at the end of the 4-hour period of each series studied varied less than 1 per cent.

### Summary

A study has been made of the action of sodium sulphite and mixtures of this chemical with sodium bicarbonate on black gum (Nyssa sylvatica). The results of this study have shown that the relative proportion of these two chemicals affects (I) the velocity of the pulping reaction, (II) the color, (III) the chemical properties of the resulting pulps, and (IV) the amount of corrosion of the steel digester in which the reactions were conducted.

The results indicate that both from the standpoint of corrosion of pulping apparatus and color of the pulps that ratios of sodium sulphite to sodium bicarbonate of approximately 3 to 1 give the most satisfactory results.

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# Vulcanized Fiber Manufacturing Problems*

By F. L. Simons[1]

The published literature on the usbject of vulcanized fiber, or "hard fiber" as it is commonly called, is very meagre, and is confined mainly to a few general descriptions of little use to the technical man interested in the subject. Such information as there is may be located in the recently published *Bibliography of Paper Making* under the headings of vulcanized fiber and parchment paper. The present discussion is in no way an attempt to fill this gap in cellulose literature, but, as paper quality is all important to the hard fiber maker, some of his paper-making problems may be of more or less general interest. As a matter of introduction, it will be necessary to review briefly the general method of making vulcanized fiber.

The name itself is a bit of a misnomer. Indurated fiber, or chemically hardened paper would seem to be better, as, basically, vulcanized fiber is merely a special grade of paper treated with solutions of zinc chloride, sulphuric acid, etc., in such a way that it undergoes a large shrinkage and consequent increase in density and hardness.

It has long been known that solutions of sulphuric acid, zinc chloride, hydrochloric acid, etc. will dissolve or disperse cellulose. The vulcanized fiber manufacturer makes use of these same so-called solvents but under conditions whereby treatment of the cellulose is stopped short of the solution point. In other words, he uses chemical means to gelatinize and hydrate cellulose to an extent comparable to, and with an effect similar to a tremendous amount of beating on ordinary paper stock. This is by no means exactly accurate, but nevertheless, there is some similarity between vulcanized fiber and glassine paper or similar heavily beaten stocks.

Commercially, the vulcanizing or parchmentizing process simply includes mechanical means for leading one or more webs of paper through a bath of 55 deg. Bé. sulphuric acid (cold) or 70 deg. Bé. zinc chloride (at 110 deg. F.).

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If the discontinuous or sheet method is used, a single web or ply of paper is so treated and then wound up on itself on a large diameter roll. When the desired number of plies have accumulated, the built-up sheet is cut across and stripped from the roll, and the procedure is repeated to produce another sheet. If the continuous method is used, 2 to 20 webs or plies of paper are fed through the treating bath at once, and are then united by heavy squeeze rolls, much in the same way that a multicylinder paper machine operates. This produces a continuously moving web of fiber, of course. Under continuous operation, the degree of gelatinization of the paper must be carefully controlled, otherwise the individual plies will not stick together properly.

The steps following this stage of the process (either sheet or continuous) include merely provision for washing or soaking the fiber free of zinc chloride or sulphuric acid, means for drying, pressing and calendering, and the usual finishing room operations. In the sulphuric acid process, the acid is sometimes recovered, and sometimes not. The higher cost of zinc chloride makes its recovery from the wash water essential, however.

### Paper Requirements

Not all kinds of paper are suitable for parchmentizing or vulcanizing. First, the paper must have a certain minimum absorbency and porosity so that the indurating solution can penetrate the full thickness of the sheet within a reasonable time. The Klemm test for absorbency and the Gurley densometer reading give some measure of these qualities, but they are not entirely satisfactory. For instance, an all-rag sheet may vulcanize properly while a straight alpha sheet of the same porosity and absorbency will be quite unusable. Apparently what happens is that the speed and extent of gelatinization may in some cases be high enough to close the surface pores of the sheet and prevent further absorption of the treating solution.

The question of speed and extent of gelatinization as influenced by paper quality is a very peculiar one. Experience indicates that variations are due to two things: (1) The internal structure of the sheet and (2) the chemical and physical properties of the individual fibers in the sheet. By internal structure we refer to the general "lay," or actual mechanical construction of the sheet as partly shown by formation, Mullen, tearing, folding, and wet strength tests. Such tests, either individually or as a group, do not give a true picture of this internal structure as the fiber-maker visualizes it, nor do they indicate differences accurately enough to be of real value, mainly because of the difficulty of separating effects of structure from effects of fiber character. Two sheets of paper run off two different machines but from the same stock may not, and probably will not, produce the same grade of vulcanized fiber, even though every precaution is taken to duplicate paper making conditions and the physical tests of the sheets. This is also another way of saying that the vulcanizing process is very critical as to paper quality if it is desired to produce a given quality of fibre and to maintain its uniformity in day by day production. This is particularly true of the sulphuric acid process, where gelatinization is so rapid. One would almost be inclined to suggest that a parchmentizing test or vulcanizing test would be a good method of getting at the internal structure of paper, at least on a comparative or empirical basis.

Differences in this internal structure of paper manifest themselves not only as changes in speed and extent of gelatinization, but also give rise to different rates and extent of shrinkage during vulcanizing. These two results are not independent, of course, and there are other factors to be considered as well, but the general parallelism to paper structure is readily apparent. Changes in speed and extent of gelatinization will be observed as changes in finished fiber quality, while changes in shrinkage (during vulcanizing) give rise to mechanical difficulties in operation. Where several plies or paper are run simultaneously, even small differences in either rate or total shrinkage between the various plies may produce changes in quality and also upset the timing of the operation to such an extent that wrinkles, cockles and blisters are apt to follow.

### Character of Individual Fibers

Continuing our discussion, the second point to be considered is the chemical and physical character of the individual fibers. A priori we would expect the past history of paper stock to determine largely the general manner in which it would imbibe water and become gelatinized, and this is fully borne out by experience. This phase of the matter is intimately concerned with the sources of the stock, (a) whether old or new rags or wood pulp, (b) the method of cooking, (c) beating (to some extent), and (d) drying. The largest single difficulty in the way of manufacturing fiber paper from old rags (as it almost all is) is the variation in quality of the raw stock. Apparently the only successful method of handling the situation is the blending of several different lots as purchased. This increases rag-room expenses, inventories, etc., but it seems to be the only solution. A satisfactory test for rag quality would help a great deal, except for the difficulty in obtaining fair samples.

The cooking procedure employed will obviously have its effect on the ease with which the fibers gelatinize, as well as affecting other things. Beating, as far as the fibers individually are concerned, is not of great importance in the writer's opinion, but it is, of course, of tremendous influence on the sheet as a whole. Beating, to the fiber paper maker, is a good deal of a paradox anyway, as he is trying to make a sheet of blotting paper with a high tensile and tearing strength and containing well beaten firmly-felted fibers.

It is indeed unfortunate that there seems to be no test or combination of tests that will determine beforehand the usefulness of a particular sheet for fiber making. The microscope is of some help but personal judgement, based on long experience, seems to be the only reliable guide. Actually, to know the quality of a given sample of fiber paper means that one must know exactly how it was made in all details, and also know the grade and history of the stock it was made from.

### Progress in Manufacturing Methods

When it is remembered that gelatinization, whatever the rate and extent, paper shrinkage, adhesion between plies, etc., are all accomplished or take place in the few seconds or few moments that the paper is passing through the vulcanizing bath, one begins to visualize the extremely critical nature of the process, especially in the case of the sulphuric acid method where the time factor lies between five and fifteen seconds. Add to this the fact that production speed must be maintained in spite of the weakness of the freshly impregnated sheet and the consequent mechanical difficulties in handling the material, and we have an explanation of the fact that until very recently the vulcanized fiber manufacturer was producing a very high percentage of defective stock and a product that was anything but uniform in quality. The industry in general may not thank the writer for referring to such conditions of operation, but it is a fact nevertheless, and is used in this case merely to bring out the point that progress in overcoming these troubles has been rapid in recent years and is still going forward.

Such progress has been along two lines, (a) better paper making and (b) better mechanical facilities and devices in the vulcanizing department. After a little experience it is no great job for a paper-maker to produce a satisfactory rag sheet for this purpose, but to maintain the day by day quality of that sheet and to add small variations of character to produce several different qualities of fiber is another matter. It is being done by more careful buying, sorting, and blending of rags, and by very close control of the variables of beater and machine room operation.

# The Cause of Failures in Shipping Containers*

By C. A. Plaskett[1]

An emphatic challenger to industry today is to reduce the losses in the cost of distributing merchandise that result through the use of inefficient shipping containers. This challenge is not alone to the manufacturer of a particular type of shipping container but to the manufacturers of containers and container materials in general, to the transportation agencies, and to the shippers as well. A great deal has been undertaken by all of these groups to improve containers and there have already been distinctive accomplishments, but there is still much to be accomplished.

The manufacturers of containers and container materials seeking to improve their products years ago enlisted the aid of the research laboratories to study the packing problem and to develop suitable machines and appliances for testing the relative efficiency of various types of shipping containers. Data accumulated through these laboratory tests during the past 15 or 20 years enable the engineer to build the maximum strength into almost any type of container with the minimum of materials and labor.

### Demand Economical Containers

The problem of the box manufacturer, however, does not end merely with increasing the strength of containers so as to effect a reduction in the percentage of failures. If that were his problem, it might readily be solved in a manner similar to that which was observed a few weeks ago. In this particular case a manufacturer was using relatively small sized, double thickness corrugated fiber board boxes for shipping breakfast food packed in cartons. Such practice appears foolish and extravagant. This product is not of a fragile nature and does not need the degree of protection against pressure, puncturing, or shocks, and the like that is afforded by such an expensive container.

The conscientious box manufacturer realizes that to serve the best interest of his customer and continue to enjoy his patronage the container he furnishes must not only afford a reasonable amount of protection to the contents but it must be the most economical container for the particular use. It would seem to be a sound principle of economics that no deficiency should be permitted in a container whose presence does not entail less total expense than its removal.

If a container fails by tearing at the edges which have been weakened by scoring the board at a low moisture content, as is frequently done during the winter months when the humidity in the box plant is very low, there are several courses open to the manufacturer. If the damage to the contents is slight no particular expense may be warranted to improve the box. If the damage is excessive, however, the box manufacturer may increase the humidity in the box plant and thus avoid injuring the board when it is scored. On the other hand, he may ask for a change in the quality of the paper, or he may change the construction of the built-up board so as to either increase its strength or facilitate the scoring at a low moisture content. The manufacturer should know to what extent the strength of the box can be increased by each of these changes, the cost of making the change, and whether the increase in strength is sufficient to warrant the expense.

### Must Know Minimum Requirements of Containers

One of the most important of the practical problems that is confronting the fiber board container industry today, as well as other shipping container manufacturing industries, is to determine the minimum requirements of a container for each of the many uses to which it is put. This is not an easy problem. One of its main difficulties lies in the fact that there is no well-defined limit to the destructive forces that a container may encounter in service. Even though the manufacturer knows the container must protect the contents against one or more sources of damage or loss, such as pressure, shocks, puncture, contamination, moisture, and theft, he does not know which of these factors is the more important nor how much strength the box must have to give the protection that is needed. If resistance to pressure is the important consideration, then a relatively thick board having high edge compressive strength and high resistance to separation of the plies may be needed, but if resistance to shocks is the more important, then a thin solid fiber board having high tensile strength or a thick corrugated board with stiff corrugation may be desirable. Protection against moisture is also sometimes important. While prolonged exposure to rain or to air saturated with moisture is not a normal condition in the service of a box, sometimes loaded containers are stored in damp places and the container is required to provide protection in this respect. The proper balancing of the various characteristics of the board in order to produce the best box requires careful study, because the requirements of the container vary with transportation conditions and with the extent that the contents provide their own protection.

### Insufficient Data

The main reason why little progress in determining the minimum requirements of containers for different uses has been made is the fact that there has been relatively little comprehensive information on the service that containers render under actual service conditions. For many years information concerning the principles of container design and packing and how containers may be lightened and reduced in cost has been gathered, but comprehensive facts and figures on the failures or lack of failures of containers in their movement from the shipper to the consumer and the cause of the failure have never been collected. When a container fails in transit, it is seldom possible to place the responsibility accurately and convincingly. There are many possible causes of failure independent of the design and construction of the container. Some of the most likely causes are: (1) Failure of the shipper to properly assemble or close the container; (2) improper packing of the commodity in the container; (3) improper handling or storage by the shipper; (4) careless or unskilled loading into cars; (5) loading in defective or improperly prepared cars; (6) unnecessary rough handling of freight cars by train crews; and (7) careless unpacking by the dealer or the consumer.

It would only add to the waste in distribution to place the entire responsibility for preventing losses upon the container or the board from which it is made. Judgment must be exercised in placing the responsibility if we are to effect the greatest economy.

A comparatively few years ago there was a tendency for the different groups to shift the blame for failures in containers, and it was therefore extremely difficult to locate the real cause for failures. This condition, however, has changed greatly in the past 10 years. There is now a growing desire on the part of the large manufacturers, the distributors, and the carriers to study and solve together the common problems with which they are confronted. The way is open, therefore, for a serious effort to determine the minimum requirements of containers and to adjust transportation conditions so as not to place an unfair burden upon the container.

### Intelligent Investigation Needed

The only truly accurate way to gauge the minimum requirements of a shipping container is to analyze the failures that occur in service and do it thoroughly. American manufacturers have fol-

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lowed this course for years in developing such articles as automobiles and equipment for manufacturing packages, but when it comes to the container most manufacturers and shippers either believe that the same course is unneccessary, or else they do not know how to set about to get the necessary information.

This does not mean, of course, that efforts have not been made to study the failures in containers and the cause of the failure. Some manufacturers have sent out questionnaires for their customers to fill in regarding the damage to containers and commodities, and the carriers have for years compiled records of the number of different types of containers that fail in service.

The futility of attempting to determine the minimum requirements of containers from the data that have been compiled in this manner lies not so much in the data that have been accumulated but in what have been omitted. It is not enough to know the percentage of different types of containers that fail in service. Accurate data must be obtained on the nature and extent of damage to the contents resulting from each particular kind of failure in the container. The manufacturer of fiber containers needs to know the percentage of boxes of each particular design carrying a particular commodity that fail by tearing at the scores, by crushing, by puncturing, by opening at the seals, and the like, together with the amount of damage to the commodity resulting from each failure. This information alone will enable him to determine whether it is economical to add to the cost of the container or whether the container is more expensive than it should be. If the damage is excessive and the cost of improving the container more than the saving to be effected by the change, accurate data should be available to show what hazard caused the damage and how the hazard might be lessened.

### Studies Failures of Containers in Transit

The Forest Products Laboratory in 1928 began to investigate the possibilities of obtaining comprehensive information on the failures that occur in containers and their contents under actual service conditions. The information is to be used as a basis for arriving at the minimum requirements of containers for particular uses.

The first essential in this study was a definite plan for recording accurate and uniform data in such form that it could be readily summarized. A set of data sheets were therefore developed which provide a definite system of recording a detailed description of the container and packing together with a complete description of the nature and extent of the damage to the container and its contents and all possible evidence relating to the cause of damage, whether it be the fault of the container, the method of packing, the design of the commodity, or the method of handling. The laboratory has endeavored to develop these form sheets so that when they are properly filled in they will not only insure the data needed by the laboratory but they will also yield data of value to the box manufacturer, to the shipper, and to the carrier as well. A further objective has been to so develop the forms that they might be readily modified and made suitable for different groups to use in studying their specific problems.

### Field Survey

Small scale surveys in which these forms were used to study transportation hazards and failures of containers at railway freight stations and large receiving warehouses have demonstrated that the kind of information that can be obtained from studies of this kind will not only furnish an accurate basis for searching out deficient containers and redesigning them along more economical lines but will also show how to redesign the commodity so as to lessen the packing and handling costs, and how to improve handling methods. In a recent survey at Chicago of 56 carloads of canned goods packed both in solid fiber boxes and in corrugated fiber boxes and shipped from various sections of the country, the Forest Products Laboratory found that the number of damaged boxes varied from 0.15 to about 2 per cent for boxes made of various qualities of material. Forty-six per cent of all the damaged boxes were dented, 25 per cent torn, and 16 per cent were wrinkled. Thirty-nine per cent of the damage occurred in the box ends, 21 per cent in the sides, and 11 per cent in the horizontal end edge, the rest of the failures being distributed in the other parts. Strange as it may seem, the boxes showing the highest percentage of failures were not the ones made of the weakest board. By studying the cause of failures it was found that during the movement of the cars a considerable amount of the damage had been caused by the boxes shifting against protruding wall loops, by bumping against cleats in the corners of the cars; and by catching on bolts protruding through the doors. Omission of the ice bunker screen from some cars also permitted the boxes to slide underneath the bulkhead and become damaged. The percentage of the different kinds of boxes that were damaged depended more upon the location of the boxes in the car than on the slight difference in strength of the different boxes. While the damage occurring to these boxes could doubtless be reduced by increasing the strength of the board from which the boxes were made, study of the causes showed how the damage could be reduced at less expense by reducing the hazard. There is suggestive information in every failure that occurs in a container, but it is only available to the one who knows how to find it.

The foregoing study of canned goods in fiber boxes was made on boxes after they had completed only the first lap of their journey. Although the results are not representative of general conditions, the carriers after reviewing the results have nevertheless issued bulletins to the shippers and to their own employees urging them to exercise more care in preparing the interior of cars to receive canned goods shipments. This is evidence of the carrier's desire to do his part in reducing losses in the distribution of merchandise.

It is believed that the manufacturer of containers, the manufacturers of the commodities, the dealers, the carriers, and all others concerned will derive so many tangible benefits from studies of this kind that the various groups will unite in their continuance.

### Cooperative Studies Must be Continuous

Collective determination of the minimum requirements of containers through study of the nature, extent, and cause of damage will insure greater profits to the manufacturers, distributors, and carriers and at the same time will help turn the enormous waste in distribution into lower prices for the public.

Modern improvements in transportation conditions and changes in the methods of handling package goods make it imperative that these studies be made continuously in order that the containers may be designed to meet the new conditions as they arise. American transportation conditions have changed greatly in the last few years and the containers that were economical even two or three years ago are likely to be obsolete today.

### Cooperation Needed

The realization of the economies inherent in these studies is dependent upon the whole-hearted cooperation of all groups in compiling data untainted with a suspicion of inaccuracy due to selfish motives. Many benefits can be accomplished by the various interested groups working independently but to realize the full benefits from their efforts there must be a neutral meeting ground or centralizing agency through which the manufacturers, the distributors, the carriers, and others can meet to discuss and decide questions of mutual interest.

The organized fiber container industry should realize and utilize its great potential power to further the efficiency of the fiber container through studying the requirements of these containers under actual service conditions.

The Forest Products Laboratory will be glad to cooperate in so far as is practical in adapting the data sheets for the conduct of investigations by interested groups.

# Current Paper Trade Literature

## Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

**For additional information regarding these abstracts subscribers should address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C.**

### Pulp and Paper Testing

**Proposed Standard Method of Pulp Evaluation.** H. Ainsworth Harrison. World's Paper Trade Rev. 91, 1016, 1022-1026 (March 22); 11 94-1206 (April 5); 1282-1296 (April 12, 1929); Paper Maker and Brit. Paper Trade J. 77, 368-374 (April 2, 1929). A description of the method for determining the initial, or unbeaten, strength of pulp, proposed for adoption as international standard by the Technical Section of the Paper Makers' Association of Great Britain; followed by a discussion by the members present at the meeting.—A.P.-C.

**So-Called Copper Number of Pulps.** J. H. Ross, H. P. Stockwell and A. C. Hill. Forest Laboratories of Canada, Montreal. Pulp Paper Mag. Can. 27, 473-475 (March 28, 1929). From the results of a brief study of the copper number of pulp it is concluded that the copper number is too intimately bound up with the physical state of the sample to allow of its being used as a quantitative test for impurities in fibrous substance. —A.P.-C.

### Testing

**Copper Number Determination.** E. Richter. Wochbl. Papierfabr. 60, 261-4 (1929). As a rough control method, the Schwalbe detn. may be carried out by heating for one hr. in a water bath at 94° without a stirrer. The results are higher than those obtained in the usual way, but are self-consistent. Using the Braidy method, the Cu. no. of machine-dried or of beaten pulp was found to be higher than that of the wet or unbeaten stock. The Ag. no., which has been recommended, requires too much time (24 hrs.) for a routine test method.—R.H.D.

**Baryta Resistance of Pulp.** J. H. Ross and A. L. Davidson. Forest Products Laboratories of Canada, Montreal. Pulp Paper Mag. Can. 27, 508-509 (April 4, 1929). On treating pulp with boiling barium hydroxide solution, maximum extraction is obtained with a solution which is saturated at a temperature of 25°C. (about 4.5 per cent of barium hydroxide). The residue obtained by boiling 5 g. of bleached sulphite pulp with 250 cc. of this solution for 30 minutes under a reflux condenser, washing with distilled water, then with acetic acid and again with distilled water, and then drying, corresponds very closely to the actual alpha-cellulose content of the pulp.—A.P.-C.

**Some Aspects of Freeness Testing.** D. S. Davis. International Paper Co., Glens Falls, N. Y. Paper Mill 52, No. 8, 62, 64, 88 (Feb. 23, 1929); Paper Trade J. 88, No. 11, 60-62 (March 14, 1929). Previously published data are brought together (Ind. Eng. Chem. 18, 631 (1926); 19, 84, 162 (1927); Pulp Paper Mag. Can. 26, 1055 (1928).—A.P.-C.

**Control and Evaluation of Sulphite Pulp Quality.** G. P. Genberg and E. O. Houghton, Fraser Companies, Ltd., Edmundston, N. B. Paper Trade J. 88, No. 17, 71-78 (April 25); No. 18, 53-59 (May 2, 1929). The Roe chlorine number determination (Paper Trade J., Oct. 9, 1924) and the initial strength test advocated by Roe and developed by the TAPPI sulphite committee are described, together with their application; they are compared with the other methods in use, and their relation to the various manufacturing steps are discussed and the deductions possible are brought out. Microscopic analysis was found unreliable for the determination of the relative percentage of sulphite and groundwood in catalogue paper; but the Roe chlorine number was found sufficiently reliable and accurate for the purpose; determination of the chlorine number of groundwood over a period of several days justified the assumption that it has a constant average chlorine number of 35.0, but the chlorine number of the sulphite varies according to the grade of the pulp and the chlorine number of the sulphite used must be known in calculating the composition of the paper. Working with known mixtures gave a maximum deviation between calculated and true sulphite per cent of 3.7 per cent, while in over 75 per cent of the cases the deviation was less than 2 per cent which is much closer than can be obtained by microscopic analysis. Investigation of the effect of size, alum and filler showed that, at least up to certain limits, the presence of these materials has no adverse effect on the determination; when the amount of filler is large, however, it is necessary to allow for this in weighing up the sheets prior to exposing to the chlorine gas. Comparison of the determination of sulphite pulp by the Roe chlorine number with the other methods put forward from time to time was favorable to the former; it has the great advantage of being rapid and simple in operation and capable of being checked by inexperienced operators; with the pulps used (chlorine numbers varying from 2.50 to 4.50) the maximum deviation from the average was 3 per cent, which is sufficent accurate for any routine test. The Roe chlorine number gives a direct indication of the bleachability: plotting chlorine number against bleach consumption obtained in laboratory tests gives a straight line, and the chlorine number can be converted into bleach consumption by multiplying the former by a factor which is the same for all chlorine numbers when bleaching to a uniform high white, the factor itself depending on local conditions in different mills. This straight line relationship, however, does not hold in actual mill practice due to operating conditions, there being a rapid increase in bleach requirements for the lower chlorine numbers and then a continual diminishing rate of increase for the higher chlorine numbers. If the amount of bleach is corrected for consistency variations and the other factors are taken into consideration, the relationship approaches more nearly to the theoretical, especially for the lower chlorine numbers; so that when all factors are considered a constant ratio of bleach to chlorine number is probably the correct condition to obtain a uniform average white. When bleaching to a low color, however, it was found that, using the same ratio of bleach to chlorine number, pulps of low chlorine numbers gave a much better color than those of higher lignin content, the color decreasing progressively with increase of chlorine number of the unbleached pulp and the lignin content of the bleached pulp increasing correspondingly. This is explained at length on the assumption that bleaching may be considered as taking place in two main stages: (a) a reaction between the hypochlorite and the lignin with formation of colored reaction products, and (b) oxidation of these products to produce soluble colorless compounds. While there is no apparent relation between chlorine number and strength

properties of pulp in individual determinations, the average of a large number of tests tend to bring out a more or less distinct relationship between these two properties: the bursting strength (Mullen) increases with the chlorine number: the tear and freeness increase up to a chlorine number of about 3.7 to 3.8, after which they drop again while the Mullen continues to rise though at an increasingly slower rate. This general relationship holds only for a given grade of unbleached sulphite, but not for different grades; in the latter case pulps having practically the same chlorine number can have entirely different strength properties. The results of comparative mill runs (each lasting over several days) of cooks lasting 10 and 16 hours, respectively showed that practically the same yield was obtained in both cases, the shorter cooks being carried to about 10°C. higher than the long cooks. The long cooks, though finished at a higher blow-test of the cooking acid, gave a pulp with appreciably lower chlorine number (3.21 against 4.23) than the short cooks. The strength properties of the bleached pulps were approximately the same in both runs, owing to differences in bleaching conditions. There was less variation in the individual cooks with the longer cooking period. In trying to duplicate a European sulphite of low bleach consumption and high strength, it was shown that a slow and careful cook at a low temperature produces a pulp of both satisfactory strength and low chlorine number, a condition which is difficult to duplicate at a short cooking time and the increased temperature requisite for the high degree of lignin removal desired. Bleaching with sodium hypochlorite was found to give a brighter color and much higher strength properties than bleaching with calcium hypochlorite. Over-bleaching causes an appreciable drop in strength properties; in bleaching with the proper amount of bleach the strength first increases then drops to a constant value, which is slightly higher than that of the unbleached pulp, and at the same time there is progressive decrease in alpha-cellulose content due to attack of the cellulose. By cutting down the bleaching temperatures, less bleach can be used without much decrease in color but with definite increase in strength of the bleached pulp. Using the same bleach ratio, two-stage bleaching with intermediate washing gives slightly lower strength properties and alpha-cellulose content but much better color than single-stage bleaching. At 5 per cent consistency, when using a lower bleach ratio in two-stage bleaching, the same color can be obtained as with a single-stage bleaching, and the total strength and alpha-cellulose content is higher in the former case. Less time is required to exhaust the same amount of bleach in single-stage than in double-stage bleaching, owing to the low concentration of the reacting substances (bleach and lignin impurities) in the latter case. No appreciable saving in time was noted in two-stage bleaching. Using a high consistency (about 15 per cent) for the second stage of the bleaching considerably reduced the time required, has no effect on the final color and lowered the alpha-cellulose value from 0.5 to 1.0 per cent. In the experimental bleaching there was greater hydration of the stock at low consistency, because there was no mixing, except at the start and occasionally thereafter to ensure an even penetration of the bleach. Bleaching at high consistency, whether in one stage or in the second stage of a two-stage bleaching system, has a detrimental effect on the chemical purity of the pulp as measured by the alpha-cellulose content. The results of strength determinations carried out on the stock over a period of two weeks at various stages of the paper mill processing showed that there is a decided increase in total strength in pumping the slush from the pulp mill to the paper mill, a mile away; the other variations in strength were such as might be expected. Comparative strength tests of pulp and of the paper therefrom in the mill showed that the bursting strength of the pulp undoubtedly has a definite influence of the bursting strength of the paper, any change in the former causing a corresponding change in the latter; the changes in tear and total strength of the pulp bear a somewhat similar relationship to the bursting strength of the paper, though their effect is not so pronounced and regular as that of the Mullen test.—A.P.-C.

**Xylol Test for Roofing Felt.** P. W. Codwise. Certainteed Products Co. Paper Trade J. 88, No. 12, 66 (March 21, 1929). The principle of the test is that of gauging the rate at which a light volatile liquid rises in a vertically suspended strip, the lower end of which dips beneath the liquid contained in a suitable dish. The technique is described in detail. When reporting on the test, the moisture condition of the felt should be stated. In considering the results each weight or thickness should be classed by itself when translating the results into terms of saturating machine behavior. The results of the test may be used in conjunction with a test for saturating capacity, such as the "kerosene test."—R.H.D.

**Analytical Quartz Lamp as an Aid in Textile Testing.** A. Sommer. Wochbl. Papier-fabr. 60, 9-13 (1929). Various uses for the lamp are outlined, and a list of the fluorescent colors of various fibers depends upon the kind and amount of incrustants present, and therefore may be useful in identifying types of fibers, or in measuring the degree of bleaching or detecting over-bleaching. It may also be of use in testing dyes. Unfortunately its use has not been sufficiently studied as yet to permit more than limited and qualitative application.—R.H.D.

**Correction Curves for Use with the Schopper-Riegler Freeness Tester.** Dr. Korn. Papier-Fabr. 27, 123-4 (1929). When the consistence of stock in the beater is not accurately known, the amt. used for a freeness test may be detd. by rapidly drying and weighing the mat of pulp from the tester. A series of curves is given by which the freeness may be corrected for any weight of sample between 1 and 4 g., the standard being 2 g. —R.H.D.

**Is It Possible to Determine the Mechanical Pulp Content of Paper Accurately?** Dr. Korn. Wochbl. Papierfabr. 60, 236-7 (1929). The Argentine tariff commission has adopted the Halse method for this purpose. By this method, the mech.-pulp content is calcd. from the lignin content of the paper, empirical values being assumed for the lignin content of average sulphite and mech. pulps. The large possibilities of error are obvious.—R.H.D.

### Paper Specialties

**Discoloration of Paper.** Anon. Boll. Reg. Staz. Sperim. No. 2 (1929); Pulp Paper Mag. Can. 27, 461-464 (March 28, 1929). A brief discussion of some of the chief factors causing discoloration of fine papers which are intended to be preserved for a considerable length of time.—A.P.-C.

**Wrapping Paper.** A. Kupper. Eng. pat. 302,367.—Corrugated paper or similar material is impregnated or coated with paraffin, stearin, beeswax, mineral wax, or mixtures thereof, lacquers or rubber.—A.P.-C.

**Kraft Paper.** R. Dulou. Bull. Inst. Pin. No. 57, 84-88 (Feb. 1929). A description of its manufacture.—A.P.-C.

**Cardboard.** G. E. Heyl and Hycolite Liquid Wallpaper Mfg. Co., Ltd. Eng. pat. 294,442, Jan. 26, 1928. Paper such as waste paper or fibrous pulp is finely subdivided in a dry condition by a high-speed disintegrator; it is then mixed into a stiff paste or dough with water and a binder such as destrin or resin glue, treated in a colloid mill, and then formed into sheets by passing between rolls and dried.—A.P.-C.

**Impregnating Composition Board.** G. Klinkenstein and G. D. Magnus assignors to Maas and Waldstein Co. U. S. pat. 1,705,090, March 12, 1929. In order to render porous composition board such as that formed from cement and fiber mixtures impervious to water, it is heated to remove moisture and expel air from the interstices and then immersed while hot in an impregnating composition comprising a hot mixture of China wood oil, lin-

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seed oil, turpentine and heavy naphtha, and finally removed and baked.—A.P.-C.

**Formation of Board by Means of Continuous Filters.** Charles Fuhrmeister, Jr. Oliver-United Filters Co. Paper Trade J. 88, No. 20, 47 (May 16, 1929); Paper Mill 52, No. 20, 39 (May 18, 1929). A special type of continuous filter has been developed which forms a sheet which is entirely homogeneous and having practically the same strength in both directions. The sheet is formed by a comparatively low vacuum, usually from 10 to 15 inches at the filter discharge valve, this vacuum being induced by either a wet or dry type vacuum pump. The stock is fed to the drum filter at a consistency of from 0.5 to 1.5%, depending on the thickness of the sheet desired and freeness of the pulp. The drum revolves at an average peripheral speed of 6 to 10 feet per minute, and the sheet discharged averages 7/8 inch thick, containing 80% moisture. The advantages claimed are: elimination of the laminations in board made on multi-cylinder machines, elimination of belts, conservation of floor space, perfect sheet formation, and practical absence of fiber in the effluent.—A. P.-C.

**Pulp Board.** J. J. Hinde. Eng pat. 304,171.—In the manufacture of pulp board from corn stalks and analogous fibrous material, the material is carefully shredded, maintaining a proper proportion of long and short and coarse and fine fibers, fed to a tank provided with stirrers, and the pulp is picked up in sheet form on an open mesh conveyor belt passing round a driven skeleton cylinder having a suction pipe. The sheet material is supported between belts as it passes through a press and then between drying felts along a box through which heated air is passed, the felts being maintained dry by heated rolls. A vacuum press may be interposed between the wet press rolls and the dryer. —A.P.-C.

**Waterproof Straw Pulp Board.** E. B. Weston and W. G. Clark assignors to Terre Haute Paper Co. U. S. pat. 1,697,702, Jan. 1, 1929.—Pulp board is formed from straw fibers substantially free from alkali and having rosin size incorporated with them.—A.P.-C.

**Pulp Board and Process of Manufacturing the Same.** H. T. Price. U. S. pat. 1,696,896, Dec. 25, 1928.—The board contains finely ground "ti-tree."—A.P.-C.

**Adhesive Paper and Fabric.** I. G. Farbenindustrie Akt.-Ges. Eng. pat. 302,588.—In adhesive strips of paper coated with gum or rubber, the side of the material not coated with adhesive is coated with a cellulose ester, mixed or ether ester of a higher fatty acid. Unrolling of a roll of the material is thus facilitated, as the sticky surface does not adhere to the reverse side of the strip. The adhesive power of the gum or rubber is not affected. Cellulose laurate is stated to be particularly suitable for the coating.—A.P.-C.

### Sulphite Process

**Hot Acid Accumulator.** A. D. Merrill. Stebbins Engineering and Manufacturing Co., Watertown, N. Y. Pulp Paper Mag. Can. International No., 101-104 (Feb. 1929); Paper Trade J. 88, No. 14, 54-56 (April 4, 1929).—A discussion of the merits of the Chemipulp Heat, Gas and Liquor Recovery and Cooking Process, in which the acid and gas relieved from sulphite digesters during cooking are absorbed under pressure in hot acid, instead of cooling before absorbing as is the current practice at the present time. The direct advantages claimed are steam saving, increased yield, increased gas recovery with a resultant increase in the strength of the acid. In addition, the following indirect savings are also claimed; cooking can be controlled so that a soft easy-bleaching or modified Mitscherlich pulp can be obtained with a great reduction in screenings; the hot gas recovery eliminates the troubles that most sulphite mills experience with the cold gas recovery during the summer months, and assures more uniform acid; it is possible practically to eliminate, by recovery and saving, the blowing of obnoxious gases into the atmosphere; the strength of the pulp is increased so that less sulphite is required for furnishing such papers as news print or any other paper that requires a mixture, such as groundwood.—A. P.-C.

**Practical Study of the Cooking of Wood for the Production of Sulphite Pulp.** G. Oddon. Papeteris Special No., 265-276 (1928).—The following are considered to be the optimum conditions for the production of strong sulphite, the cooking liquor should contain 4.5 to 5.0 per cent of total sulphur dioxide at the start and 0.8 to 0.9 per cent at the end of the cook; pressure 4 kilos per sq. cm.; the temperature should be raised rapidly to a little under 110 deg. C. kept at 105 deg. to 110 deg. C. for 3 to 4 hours, and raised gradually to 125 deg. C.; relieving should be done as little as possible consistent with obtaining the required temperature; the time of cooking depends on the rate of exhaustion of the total sulphur dioxide. Results are given of a number of commercial cooks bearing out the above conditions.—A. P.-C.

### Sulphite Waste Liquor

**Treating Sulphite Waste Liquor.** J. T. Travers assignor to Travers-Lewis Process Corp., U. S. pat. 1,699,258, Jan. 15, 1929. —The liquor is allowed to stand quiescent in a settling zone to permit suspended matter to settle out, and the liquor thus separated from substantially all the suspended matter is then passed through porous calcium carbonate and maintained in contact therewith for about 2 minutes to clarify the effluent.—A. P.-C.

**Treating Sulphite Waste Liquor.** E. L. Rinman. U. S. pat. 1,699,808, Jan. 22, 1929.—The waste liquor is evaporated and combustion of its combustible matter is then effected in such a manner that the sodium compounds present are converted into sodium sulphide and sodium carbonate; the combustion residue is dissolved in water and treated with an oxide of a metal such as zinc oxide, the sulphur compounds of which are insoluble in caustic soda solution so that all the sodium sulphide is transformed into caustic soda; the separated solution is then treated with sulphur dioxide to produce fresh cooking liquor.—A. P.-C.

**Treating Sulphite Waste Liquor.** G. C. Howard. U. S. pat. 1,699,845, Jan. 22, 1929.—An alkaline solution of sulphite liquor from which the major portion of the calcium ligninsulphonic acid constituent has been previously decomposed and removed is treated with an excess of a solid reagent such as lime to effect complete decomposition and removal of the residual ligninsulphonic acid and the precipitate and associated solid reagent thus formed are used together in treating a further quantity of the liquor to effect removal of the major portion of its calcium ligninsulphonate.—A. P.-C.

**"Hot Joint Paste."** W. Hoskins assignor to Standard Oil Development Co. U. S. pat. 1,699,294, Jan. 15, 1929.—A paste suitable for sealing pipe joints exposed to high temperatures comprises graphite and solids from sulphite waste liquor.—A. P.-C.

**Process for the Regeneration of Sodium Bisulphite Cooking Liquor.** E. L. Rinman. Fr. pat. 627,691, June 13, 1927.—The waste liquor is concentrated to a moisture content of 15 to 25 per cent, calcined, and then treated with water. The resultant solution contains only sodium sulphide and sodium carbonate. It is treated with carbon dioxide until the whole of the hydrogen sulphide is eliminated, and then, containing only sodium bicarbonate and sodium sulphate, it is saturated with sulphur dioxide and is then ready for re-use for cooking. The hydrogen sulphide evolved from the solution is burnt to sulphur dioxide. The loss of soda and sulphur is made up by adding sodium sulphate to the waste liquor either before or during incineration of the dry residue. Part of the sulphur going through the cycle can be used in the form of sulphurous acid together with sodium chloride for the production of sodium sulphate by the Hargreaves-Robinson process, this sodium sulphate being subsequently used in the process.—A. P.-C.

Section of the

# COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

# Health and First Aid Pay Dividend*

## Medical Attention, Preventive Measures, First Aid, and a Plant Hospital Save Five to Eight Times Their Annual Cost Through Lower Compensation and Reduction in Time Lost from Production

By Russel J. Waldo

Medical examinations, first aid equipment, and hospital facilities in industrial plants were formerly held to be unnecessary expenses, but closer study has brought gradual recognition that in reality they contribute to production maintenance by reducing lost time to a minimum.

A successful co-operative handling of medical and first aid work among employees is in use in one eastern city, where five plants of medium size are located within a block and a half of each other. At a central point readily accessible to all a well equipped hospital for workers has been established, with two nurses in attendance. Each company is billed monthly for its share of the total cost by the physician in charge. The total number of workers privileged to use the hospital is close to 3,000, including both men and women employees. For the first ten months the cost of operation was $9564.18. The estimated savings as given by each of the chief executives ranged from three to five times the actual cost to them, and all conceded that the hospital was the most complete they could desire and far more efficient than each could have maintained independently.

### Scope of the Present Survey

The present study of hospital and first aid facilities covers 181 concerns with 218,422 employees, an average of 1262 employees per plant. In every instance the plants were main plants, not branches. A grouping by industries shows: food plants 31, automobile 7, electrical 14, furniture 26, drug 6, and miscellaneous 97.

First aid rooms, with nurse and doctor on call, were provided by 21; first aid rooms with a doctor part time and a nurse full time numbered 93. In 16 two nurses and one doctor were on duty full time, while 51 provided two nurses and a doctor part time.

Forty-six of the concerns examine all employees once, 6 repeat the examination periodically, and 37 provide dental service for workers. Six of the electrical companies give eye examinations every six months, and two battery companies check the lungs of those working in the lead rooms every four months.

In the plants covered by the survey preliminary examination of workers was far commoner than periodic re-examination of workers. Six of the electrical companies bive eye examinations move toward the exclusion of the physically unfit by means of the entrance examination. These examinations are regarded by 179 of the concerns interviewed as one means of reducing accidents, sickness, and loss of time on the part of workmen.

In industries subject to occupational disease these examinations are manifestly essential for the greater efficiency and health of the workmen. In the food industries and kindred lines they are now required by either state or municipal law.

### Specialized Forms of Service

In 137 instances a change of work within the organization has been resorted to for employees contracting sickness within the organization. Many of the skilled workmen in industry are anemic. Where the organization operates a cafeteria for employees, these workers are given free milk in mid-forenoon and mid-afternoon upon the physician's recommendation, a simple yet effective measure that has saved to those industries a large number of efficient workers.

Twenty-six executives had a record of a total of 117 workers who had been given milk, malted milk and egg milk shakes during working hours. In most instances the company stood the entire cost, while in others the employee furnished the eggs or the malted milk powder.

Dental inspections are a part of the periodic examinations of 28 concerns, and every executive reports that the cost of such service has come back in the form of greater efficiency.

Wherever dental service is offered, a relief work is done free at all times. In 17 instances all dental work is free after six months' employment; 9 require a year's service; in 6 the employee pays for the materials, and in 5 the employee pays for half the material. In one instance where a dentist and nurse combine first aid and the dentist's office, the general manager estimated that the cost was a few cents under $3 per worker per year, while the gain was at least $25 per employee.

The services of an oculist are provided in 11 electrical plants. In 9 of these the oculist's charges are met by the company, the employee paying the cost of the glasses during the first year. Seven of these plants furnish the glasses after one year's service, and 2 others require two years' service.

Two battery companies furnish without charge to workers employed in the lead paste rooms a specialist for the ear, nose and throat at any time needed. In 7 plants where continuous standing is required chiropodists are furnished at no cost to the worker.

With the exception of two Indianapolis manufacturers, all concerns send the nurse to the home of any sick worker to determine what care may need to be provided. Should a physician

* Manufacturing Industries.

be needed the company physician is sent, as the case warrants, at no cost to the worker, the object being, of course, to get the worker back into shape as quickly as possible. In 67 plants the worker's pay goes on in the event that the sickness was contracted during employment.

It is sometimes wise, before sending the nurse to visit homes of workers, to ascertain whether or not she will be welcome. Visits made by the nurse to check up the environment and home life of the worker are justified when indications point to the home life as the cause of inefficiency.

### Essential Items of Equipment

Analysis of the emergency hospital equipment in these 181 plants indicates the items which are commonly held essential. Steel enameled chairs and tables, instrument cabinets, medicine cabinets and operating tables are preferred to wood, being much more sanitary and more easily cleaned.

Re-dressing rooms where injuries are dressed and minor accidents handled are equipped with washstands, preferably with foot or knee faucets, medicine cabinet, instrument and dressing cabinet, rack for bottles of antiseptic solutions, instrument sterilizers, pail for used dressings, chairs, nurse's desk for records, and the necessary surgical instruments.

The operating room equipment in the smaller establishments may be similar to that listed for the re-dressing room. However, for the concern which needs more elaborate equipment the addition of high pressure steam and hot water sterilizers for instruments and utensils will be required. Wards and recovery rooms should be equipped with beds, chairs and tables, and the beds provided with blankets and electric heating pads. Few concerns provide X-ray rooms or a laboratory for diagnosing fractures and the like, preferring to make arrangements with nearby hospitals for such work, but where the number of employees runs into thousands these rooms are important.

Large plants usually have first aid kits scattered throughout the buildings, and in small, non-hazardous plants such a kit, in a small room equipped with a cot and blankets, table, and chairs, may be all that is needed. The no. 10 Insurance kits put up by Johnson and Johnson meet the requirements of the Compensation Boards of the various states, and are held adequate for a maximum of 100 workers in the average industries.

Definite information on the renuneration of company physicians, surgeons, and nurses was not forthcoming in most instances. Many physicians gave no figures, but the following data, from fragmentary sources, may assist those interested.

Where the physician is retained on call special provision is made for rates, one-third discount being the usual allowance on the call price, with all material used or supplied either at cost, or at a reduced price. The author found one physician who was on duty forenoons only, who received $2,000 annually. Calls in the afternoon or at night were made at special rates. The arrangement provided for his seeing outside patients in the company office and allowed a reasonable number of outside calls on company time. This was a rather unusual agreement, yet both parties were perfectly satisfied, there being a full-time nurse at the plant. Employees numbered about 1000. Another full-time doctor with a similar agreement received $3000 for around 1200 employees.

One physician retained for about 900 employees was guaranteed $50 per month. All employees suffering minor injuries went to his residence, one block from the plant entrance, while he came to the plant to attend to more serious cases. Another physician, arriving at the plant at 9 o'clock and leaving at noon, received a wage amounting to around $1000 per year with 850 employees to look after. This seems very close to the rating for a half-day physician.

Another method of payment is to allow 50 cents per patient handled, and the fees from the insurance company for treatment of injuries.

In larger concerns the proportional rating is about the same as already given for part-time and full-time physicians. Some of the larger plants, however, employ full-time physicians at a more substantial rate of pay. In one plant employing 3000 workers a rate of $3500 was reported, and in another, $2800. A plant employing 5000 paid $4000 for the head physician and $2100 for the assistant. In still another with 10,000 employees a rate of $5,000 was paid, with no outside-privileges whatever during the usual working hours.

In the majority of cases women served as nurses. In 8 cases of unusually heavy plant work one male nurse was found in each. In 6 plants inexperienced men were being trained for nursing assistants. In 6 others the man in charge of the first aid dispensary had had the work thrust upon him in the beginning, and through study and observation had attained his present knowledge. Men who have come through their shop first aid training generally acquire exceptional knowledge and ability.

The dispensary attendant has a multitude of duties in addition to assisting the physician in his regular work. Under the instruction of the physician he is expected to keep the records, give headache medicine, dress minor injuries, redress injuries, keep up the supply of dressing materials, call upon sick employees, and perform other similar duties.

Because of lack of knowledge concerning the use of many first aid materials, 7 attending physicians have deemed it wise to discuss briefly the uses of some of the major materials and drugs.

### How Smaller Plants Handle the Situation

Dr. W. J. McConnell of the General Electric Company of Philadelphia tells how the situation is met by some of the smaller plants in that city.

"In Philadelphia, under the supervision of the Philadelphia Health Council and Tuberculosis Committee, groups of small plants have been organized, and are given ample medical supervision at a cost not out of proportion to that which large plants are obliged to pay. Under this plan small plants having from 25 to 500 employees each, located reasonably near together and providing a total of 1,000 employees, make up a unit. Each plant sharing in this unit service provides a clinic room with the necessary equipment, and is supplied with medical and nursing service, first aid instruction, and the sanitary supervision which is required for its employees. A trained nurse, selected for her ability to do industrial work, is assigned to each unit and divides her time among the plants in her unit. A minimum of three hours of health work each week for each 100 employees is provided. An industrial physician can do the medical work in two such units. Small plants at present pay only $4.50 a year for each employee, the remaining cost being covered by the Health Council, as a part of its demonstration work. Plants can secure the same service under a permanent commercial arrangement for from $6 to $8 for each employee."

### No Set Figure Can Be Named

No set figure can be named as the minimum or maximum or even the average sum necessary to equip a first-aid room, the number and type of workers, the nature of the industry, and many other factors making each installation an individual problem. In this connection, however, a suggestion in a recent letter from Thomas E. Hicks, of Johnson & Johnson, is worth quoting. He says:

"We always suggest to people who ask us, that they consider how much money they are willing to spend in equipment for a first-aid room or hospital, and base this amount on the cost of the injuries they have had in the past. We know that the average cost of an infected injury in compensation alone is approximately $432, not including medical fees, loss of the workman for the period he was away from his job, and the cost of breaking in a new man to run the machine. If the manufacturer wants to figure it that way he will find that if he takes the cost of his injuries as being 4 per cent of an investment in equipment he can afford to spend quite a fair sum in equipping and maintaining the plant hospital."

# Turnover Control*

By W. F. Block[1]

Possibly one of the most widely discussed problems in the business world today is that of distribution costs. This is naturally occasioned by the gradual diminishing of net profits in the field of distribution. Many old established firms in the field of distribution are fading out of the picture, while the chain stores and specialty houses are coming to the fore.

About 25 years ago the big problem before the business world was manufacturing costs. The better records adopted from time to time on cost of manufacturing gradually increased the efficiency of our manufacturing institutions, until, according to the Department of Commerce statistics, for the two-year period 1924 and 1925, the output for manufacturers was increased two and one-half billion dollars, with 400,000 less men employed. Since 1925 a greater ratio has been accomplished.

According to the Department of Commerce, the increase in efficiency of distribution has not been increased in the same degree, because distributing records have not had adequate cost accounting systems.

According to Dr. Surface of the Department of Commerce, in a talk before the Commonwealth Club in San Francisco, April 18, 1929, "the distributing organizations do not have a knowledge of the costs for distribution of individual commodities." He further states: "that if a system could be devised for those engaged in the distribution of merchandise, it is reasonable to expect that similar increases in efficiency and profits would be immediately obtained by them, as has been the experience of manufacturers."

This article is intended to bring before those interested in the problem of distribution costs, a new light on the segregation of costs for the distributor as well as an automatic and necessary method by which the distributor might more scientifically control his net profits.

### An Interesting Survey

Just what such a system should consist of might easily be ascertained by a study of a recent survey of 88 individual shoe stores that failed. This survey was made by the Footwear Guild of Boston in which the following figures are displayed:

81 per cent kept no inventory control or stock records.
55 per cent kept no customer's card files.
28 per cent kept no record of operating expenses.
84 per cent kept no record of past sales by size and width.
54 per cent used no sales slips and kept no record of sales.

The highest percentages shown as reasons for failure were 81 and 84 per cent representing those who kept no inventory records and those who kept no records of past sales by sizes and widths. Had these merchants kept a proper stock control record to show them the quantity on hand at various periods as well as sales made of the different items during these periods the information gained from the record would have furnished a control over investment which would have eliminated the two most important reasons for failure.

The turnover in the shoe business is more easily controlled than is the same problem in a department store where the mark-up varies with different departments or where the items in a given department have varying mark-ups. The same net profit may be realized at time of sale on a short profit item with a fast rate of turnover as is realized on a long profit item with a slow rate of turnover.

### Necessary Information To Have

Because of the many traditions that have grown up and are still controlling the distribution of merchandise, the problem of segregating the cost in individual establishments in order to know how many turnovers are required on merchandise carrying different mark-ups has, in most instances in the past, been looked upon as too costly a venture, yet without this information the merchant continues to make succeeding investments in merchandise for resale without definitely knowing how many turnovers must be made on each purchase in order to realize his standard rate of net profit on the sale of the item. It is most necessary to have this information if proper control over turnover is desired.

The manufacturer, through years of experience, has developed his cost systems so that he knows the cost of an item made in varying quantities from a single set-up of machine and his broad cost segregation is usually:

A—Cost of manufacture, or cost to produce.
B—Cost of selling, administration, collection and delivery.

With such a division of costs the manufacturer can predetermine the amount of net profit to be made on a certain sales volume. Such a distribution of costs, however, is not sufficient for the distributor. The distributor has an additional problem which is the cost of carrying merchandise on the shelf.

### Items of Cost That Accrue

This cost of carrying merchandise on the shelf is generally considered to be 6 per cent. Analysis, however, will reveal that to put $100 worth of merchandise in a public warehouse will have the following items of cost accrue against it:

1—The warehouse cost.
2—Insurance on the value of the merchandise.
3—Taxes paid on it.
4—6 per cent interest lost through having the money tied up in merchandise.
5—The depreciation that might result from various causes.

The first three items, rent, insurance, taxes, for storing merchandising in the warehouse for one year would approximate 12 per cent of its value; by adding 6 per cent interest, we have a total of 18 per cent. Now it naturally follows that if it costs 18 per cent per year to carry $1.00 worth of merchandise in public warehouse, it would cost at least as much to carry the same merchandise on the shelf of a distributor.

On this basis, if a merchant purchased three items on January 2 with a landed cost of $10.00 one of them being blue, one red, and the other green, and he put a selling price of $15.00 on each of these three items and if he sold the blue item on January 30, he would have a landed cost of $10.00 plus a carrying charge of 1/12 of 18 per cent or 15c making his total cost (independent of selling cost, administration and delivery) $10.15. Having sold it at $15.00 the amount of gross profit left at the time of sale, out of which to pay selling expenses, administration expense, delivery and profit, would be $4.85. If he sold the red item on June 30, having carried it for six months, he would have a landed cost of $10.00 plus a carrying charge of 1/12 of 18 per cent, or 90c, making a total of $10.90 and he would have left for paying sales expense, administration expense, delivery and profit, $4.10 If the green item was sold on December 30, having carried it on hand for one year before a sale was effected, his landed cost would be $10.00, his carrying charge 18 per cent, or $1.80 and he would have left for selling expense, administration and delivery expense and profit, if any, but $3.20. Thus the three similar items, each with the same landed cost, each with the same selling price, show a difference in controllable profits of $1.65 on the $15.00 sale, or 11 per cent.

These figures clearly indicate that the distributor must do



[1] Merchandise Control Service Division, International Visible Systems Corp., Cincinnati, Ohio.
* N.A.C.A. Bulletin.

several things before he can meet with the same success in his field as the manufacturer.

1—The distributor must segregate his costs into three divisions:

A—Landed Cost.

B—Cost of carrying merchandise on the shelf.

C—Sales expense, administration expense, delivery and expected profit.

2—He must establish a stock control method which will show the number of turnovers required on each item of merchandise carried, in order to realize the expected net profit at time of sale.

To eliminate the need for costly analysis of turnover costs a chart has been prepared based on 18 per cent carrying charge, which enables the distributor to determine at the time he purchases merchandise for resale, how many turnovers he must make on that item in order to realize his expected net profit. The chart further shows how many of each item he must sell during a period of 30 days in order to realize that turnover.

With these figures set up on the unit stock control record, an inexpensive clerk keeping the accumulated record of sales, can, automatically with the signalling device, call to the attention of the management, every item of merchandise in stock which has not moved in accordance with the necessary turnover requirement. This record shows date and quantity of purchase-sales by day, week, or month-stock on hand-cost-minimum-maximum-number of turnovers required and number of units necessary to be sold monthly in order for the business to realize its standard rate of net profit on the sale of each item.

Through the use of a built-in signal the attention is directed to such items where the balance on hand has reached the minimum and another signal exposes all items that have not moved at their proper rate for one month, two months, three months, etc. With this information before him, the distributor can take such action as his experience in the business would recommend in order to speed up the sale of that item.

Those who have used this method have found that unusual effort is not always required. Most often the items displayed in the stock record not moving with sufficient rapidity have been neglected because other items have had the attention, and the first or second time the slow moving item is called to the notice of the management, they usually need little more attention than to be brought out on proper display, or the sales people simply need their attention called to them.

With the above chart and unit stock control record in operation, the distributor may quickly establish his turnover requirements on individual items. He will make turnover a mark to shoot at, rather than a result gleaned from records accumulated at the end of the year. He will make each item pay its own way and he will exact a profit from each investment he makes in merchandise.

He will gradually and within a few weeks or months reduce his stock on different items to their proper quantities and thereby eliminate the majority of reasons for mark-downs and losses, built up by carrying charges on the merchandise that in many institutions today is being carried on hand from one inventory period to another.

## Algonquin Paper Co. Damaged by Fire

OGDENSBURG, N. Y., June 16, 1930.—Considerable damage to the plant of the Algonquin Paper Company was done by fire originating in a paper machine on the lower floor. The flames gained great headway and spread to the roof where a penthouse was ignited and totally destroyed. The local fire department was called out and with the aid of employees succeeded in quenching the blaze. The fire broke out early Saturday evening and only a small force was at work in the machine room at the time. Company officials estimated the damage at $10,000 which is covered by insurance.

## Chicago Paper Market Steady

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 16, 1930.—A quiet but steady market marked the Chicago paper business during the past week. News print continued to show improvement. Better advertising conditions have cause a slightly stimulated demand which is holding well and is expected to make the market fairly attractive up to the mid-summer season. Book and cover papers are little changed with demand showing some improvement and prices steady. The fine papers continue to discount supposedly slow conditions with some excellent volume of direct mail material and redoubled sales efforts. The results are reported to be gratifying.

No relief for the price situation in the board market is expected before next Fall in most quarters where board is distributed here. The demand continues to be good, however, and this market should right itself completely before the late Fall. The kraft market, according to dealers, is somewhat improved with retail demand picking up. The price situation is still one that is much to the dislike of Chicago representatives who prefer a stable price to one that may, perhaps, be somewhat lower. Waste papers, the higher grades in particular, are active. The lower grades are moving more slowly in sympathy with their general market.

## Boston Paper Market Spotty

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., June 16, 1930.—The paper market here averages normal for this time of the year, although it is spotty. With some, trade continues steady in fine grades, while among others there is a slack demand. Wrapping paper is rather quiet, but generally holding its own. Some dealers find the wrapping paper market "not quite steady." The innovation of Southern kraft has been somewhat disturbing. Southern kraft is quotable here at .03⅜ to .04¼ f.ob. destination in carload lots and f.o.b. mill in less than carload lots. No. 2 kraft is quotable at .03¾ to .05, less car-freight to Boston. Specialties are moving well, especially in such lines as drinking cups, etc.

The box board market is fair, with prices unaltered. The board price situation as a whole is possibly somewhat better than it was a while ago.

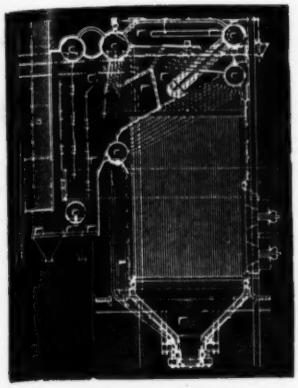
Paper stock is exceedingly dull and is expected to remain so into August. Mills are buying from hand to mouth only. A few grades are fairly steady, but the majority show a declining tendency. At least eleven grades have been revised downward during the week. White blank news is quotable at 1.50 to 1.60, compared with a previous 1.60 to 1.70. No. 1 mixed paper is quotable at a flat .20. All the grades of domestic roofing rags are lower.

## Haner Paper Mill Active

[FROM OUR REGULAR CORRESPONDENT]

TROY, N. Y., June 16, 1930.—The Haner Paper Mill near the county boundary line is again the scene of great activity as the manufacture of paper from straw is undergoing a big revival here. Although the industry is an old one the city can now boast of housing the only plant of this particular kind in the country today and hundreds of tons of paper used for wrapping purposes in cigarette and cigar production are being turned out daily. Orders are being received in large quantities from South America and Cuba and virtually the entire output is receiving a ready market in those countries.

The plant is under the supervision of L. G. Haner, a veteran paper mill man, who sees great possibilities ahead in the development of the industry. He recently relinquished a job as superintendent of a large paper mill at East Lynn, Mass., to take over the old Smart Paper Mill against the advice of a number of his friends but his efforts are now bearing fruit. The Haner family has been identified with the manufacture of paper in this section for many years and the revival of operations in the old mill are being followed with interest.



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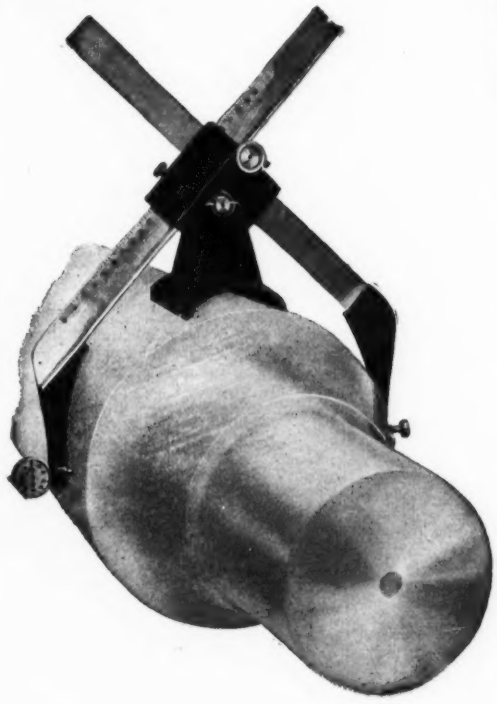

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# IMPORTS OF PAPER AND PAPER STOCK

## NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

## NEW YORK IMPORTS

WEEK ENDING JUNE 14, 1930

### SUMMARY

Cigarette paper .....1992 cs.
Wall paper .....52 bls., 33 cs.
Paper hangings .....28 bls., 6 cs.
News print .....6790 rolls
Printing paper .....159 cs.
Wrapping paper .....11 rolls, 17 cs.
Packing paper .....5 cs.
Colored paper .....2 bls., 26 cs.
Tissue paper .....159 cs.
Decalcomania paper .....19 cs.
Surface coated paper .....29 cs.
Metal paper .....47 cs.
Photo paper .....6 cs.
Filter paper .....13 cs.
Drawing paper .....1 cs.
Kraft paper .....320 rolls, 5 bls.
Parchment paper .....2 cs.
Writing paper .....6 cs.
Painted paper .....21 cs.
Caoutchouc paper .....6 cs.
Cardboard .....151 cs.
Miscellaneous paper .....51 cs.

### CIGARETTE PAPER

Standard Products Corp., Paris, Havre, 44 cs.
American Tobacco Co., West Pocasset, Bordeaux, 300 cs.
Gluckman & Strauch, West Pocasset, Bordeaux, 4 cs.
De Manduit Paper Corp., West Pocasset, St. Nazaire, 1059 cs.
British American Tobacco Co., Homeric, Southampton, 7 cs.
De Manduit Paper Corp., Sarcoxie, Havre, 426 cs.
P. J. Schweitzer, Pr. Garfield, Marseilles, 152 cs.

### WALL PAPER

The Prager Co., Inc., Lapland, Antwerp, 56 bls.
Guaranty Trust Co., Deutschland, Hamburg, 25 cs.
F. J. Emmerich, Deutschland, Hamburg, 3 bls.
F. J. Emmerich, Adriatic, Liverpool, 3 bls.
A. C. Dodman, Jr., Inc., Homeric, Southampton, 4 cs.
W. H. S. Lloyd & Co., Homeric, Southampton, 1 cs.
R. F. Downing & Co., Homeric, Southampton, 3 cs.

### PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 3 bls.
W. H. S. Lloyd & Co., Tuscania, London, 24 bls., 2 cs.
Whiting & Patterson Co., Inc., Homeric, Southampton, 2 cs., 1 ble.
F. L. Kramer & Co., Homeric, Southampton, 2 cs.

### NEWS PRINT

Johanson Wales & Sparre, Inc., Odensholm, Stockholm, 10 rolls.
Lunham & Reeve, Odensholm, Stockholm, 332 rolls.
H. Reeve Angel & Co., Inc., Odensholm, Stockholm, 557 rolls.
W. H. Bell, Markland, Liverpool, N. S., 4457 rolls.
Perkins, Goodwin & Co., Deutschland, Hamburg, 108 rolls.
Parsons & Whittemore, Inc., Stuttgart, Bremen, 759 rolls.
——, Bergensfjord, Oslo, 188 rolls.
Perkins, Goodwin & Co., Karlsruhe, Bremen, 93 rolls.
Parsons & Whittemore, Inc., Karlsruhe, Bremen, 286 rolls.

### PRINTING PAPER

Steffens Jones Co., H. Jaspar, Antwerp, 25 cs.
P. C. Zhulke, Lanland, Antwerp, 3 cs.
E. Dietzgen & Co., Deutschland, Hamburg, 23 cs.
W. A. Foster & Co., Scythia, Liverpool, 18 cs.
E. Dietzgen & Co., N. Amsterdam, Rotterdam, 90 cs.

### WRAPPING PAPER

Standard Products Corp., Lapland, Antwerp, 11 rolls, 1 cs.
Sylvania Industrial Corp., Lapland, Antwerp, 3 cs.
Yardley & Co., Tuscania, London, 12 cs.
Kronfeld, Saunders & Co., Sarcoxie, Havre, 1 cs.

### PACKING PAPER

Gevaert Co. of America, Lapland, Antwerp, 5 cs.

### COLORED PAPER

E. Dietzgen & Co., Deutschland, Hamburg, 13 cs.
E. Henningson, Stuttgart, Bremen, 4 cs., 2 bls.
Atlantic F'd'g. Co., Republic, Hamburg, 9 cs.

### TISSUE PAPER

Old Master Paper & Pulp Co., Deutschland, Hamburg, 54 cs.
F. C. Strype, City of Fairbury, Helsingfors, 55 cs.
F. C. Strype, Polonia, Helsingfors, 50 cs.

### DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 19 cs. (duplex.)

### SURFACE COATED PAPER

Gevaert Co. of America, Lapland, Antwerp, 28 cs.
Globe Shipping Co., Deutschland, Hamburg, 1 cs.

### METAL PAPER

Titan Shipping Co., Deutschland, Hamburg, 5 cs.
Hensel, Bruckman & Lorbacher, Karlsruhe, Bremen, 42 cs.

### PHOTO PAPER

Davies, Turner & Co., Deutschland, Hamburg, 3 cs.
Medo Photo-Supply Co., Tuscania, London, 2 cs.
J. J. Gavin & Co., Missouri, London, 1 cs.

### FILTER PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 13 cs.

### DRAWING PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 1 cs.

### KRAFT PAPER

——, Bergensfjord, Oslo, 320 rolls, 5 bls.

### PARCHMENT PAPER

S. Hanfling & Co., Singapore Maru, Hamburg, 2 cs.

### WRITING PAPER

Tiffany & Co., Paris, Havre, 2 cs.
Guibout Freres, Homeric, Southampton, 4 cs.

### PAINTED PAPER

T. N. Fairbanks & Co., Paris, Havre, 21 cs.

### CAOUTCHOUC PAPER

American Express Co., Deutschland, Hamburg, 6 cs.

### CARD BOARD

American Express Co., Deutschland, Hamburg, 151 cs.

### MISCELLANEOUS PAPER

D. F. Young, Stuttgart, Bremen, 13 cs.
Keller Dorian Paper Co., Paris, Havre, 18 cs.
Meadows Wye & Co., Paris, Havre, 3 cs.
Japan Paper Co., Paris, Havre, 4 cs.
Cheramy, Inc., Homeric, Southampton, 3 cs.
T. N. Fairbanks Co., Homeric, Southampton, 1 cs.
——, Pr. Garfield, Genoa, 9 cs.

### RAGS, BAGGINGS, ETC.

——, Eberstein, Copenhagen, 212 bls. rags.
International Trust Co., Deutschland, Hamburg, 73 bls. rags.
Liberty National Bank, Stuttgart, Bremen, 51 bls. rags.
A. W. Fenton, Inc., Stuttgart, Bremen, 56 bls. rags.
Arkus, Inc., Adriatic, Liverpool, 31 bls. rags.
New York Trust Co., Tuscania, London, 41 bls. rags.
Baring Bros. & Co., Tuscania, London, 44 bls. rags.
J. Cohen & Son, N. Amsterdam, Rotterdam, 28 bls. rags.
Brown Bros. & Co., Cold Harbor, Manchester, 100 bls. rags.
E. J. Keller Co., Inc., West Poacsset, St. Nazaire, 70 bls. rags.
Banco Com'l. Italiane Trust Co., Extavia, Genoa, 106 bls. bagging.
Irving Trust Co., Gravenstein, Antwerp, 118 bls. bagging.
E. Butterworth & Co., Inc., Gravenstein, Antwerp, 70 bls. flax waste.
Liberty National Bank, Gravenstein, Antwerp, 125 bls. rags.
Chase National Bank, Singapore Maru, Hamburg, 122 bls. rags.
International Trust Co., Karlsruhe, Bremen, 64 bls. rags.
Chemical Bank & Trust Co., Karlsruhe, Bremen, 112 bls. rags.
Van Oppen & Co., Karlsruhe, Bremen, 32 bls. thread waste.
S. Godfrey, Sarcoxie, Dunkirk, 29 bls. rags.
Darmstadt, Scott & Courtney, Sarcoxie, Dunkirk, 45 bls. rags.
V. Galaup, Sarcoxie, Dunkirk, 3 bls. rags.
Amtorg Trading Corp., Arizpa, Odessa, 5016 bls. rags.
Chase National Bank, Republic, Hamburg, 27 bls. rags.
——, Vestvard, Genoa, 249 bls. bagging.
Fidelity Trust Co., Vestvard, Naples, 135 bls. rags.
Darmstadt, Scott & Courtney, Vestvard, Malaga, 40 bls. jute waste; 70 bls. rags.
E. J. Keller Co., Inc., Pipestone County, ——, 221 bls. rags.

### OLD ROPE

——, Eberstein, Copenhagen, 31 coils.
Brown Bros. & Co., United States, Copenhagen, 54 coils.
Brown Bros. & Co., Deutschland, Hamburg, 80 coils.
International Trust Co., Stuttgart, Bremen, 82 coils.
Baring Bros. & Co., Tuscania, London, 49 coils, 12 bls.
Brown Bros. & Co., Bergensfjord, Oslo, 32 coils.
Anglo South American Trust Co., Incemore, London, 69 coils.
Brown Bros. & Co., Sarcoxie, Havre, 92 coils.
Liberty National Bank, Vestvard, Naples, 40 coils.
International Purchasing Co., Vestvard, Pasajes, 300 rolls.
International Purchasing Co., Vestvard, Cadiz, 77 rolls.

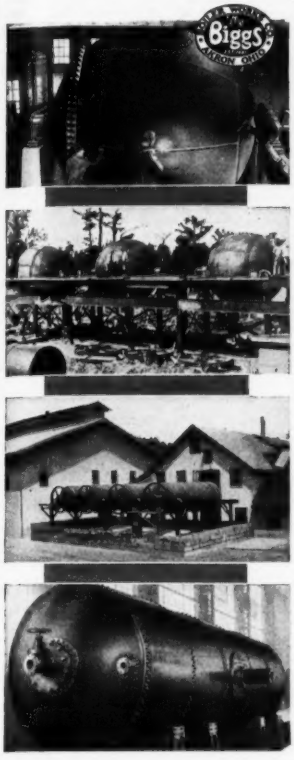
### CASEIN

A. Hurst & Co., Vauban, B. Ayres, 500 bags.
National City Bank, Sheridan, B. Ayres, 526 bags.

### WOOD PULP

Bulkley, Dunton & Co., Griesheim, ——, 2000 bls. wood pulp.
Int'l. Accentance Bank, Greisheim, Hernosand, 300 bls. sulphite.
——, Greisheim, Hernosand, 4980 bls. sulphite.
——, Greisheim, Hernosand, 5100 bls. sulphate.
Castle & Overton, Inc., Deutschland, Hamburg, 1277 bls. wood pulp, 191 tons.
Bulkley, Dunton & Co., City of Fairbury, ——, 3625 bls. wood pulp, 726 tons.
Lagerloef Trading Co., City of Fairbury, Rauma, 1280 bls. sulphite, 214 tons.
Lagerloef Trading Co., Polonia, Helsingfors, 127 bls. wood pulp.

*(Continued on page 74)*




*Top—Biggs Welded Rotary Digester. Second—Biggs Riveted Rotary Digesters. Third—Biggs Standard Cylinder Rotary Bleaching Boilers. Bottom — Biggs Tumbling Digester.*

## Biggs Builds

Welded Globe Rotary Digesters
Riveted Globe Rotary Digesters
Cylinder Rotary Bleaching Boilers
Tumbling Digesters, Welded or Riveted
Stationary Vertical Digesters, Welded or Riveted
Penstocks
Pipe Lines, Welded or Riveted
Welded or Riveted Steel Plate Construction of Every Description.

*Write for our folder, "Unusual Steel Plate Construction"*

**The Biggs Boiler Works Company**
East Buchtel Avenue
Akron, Ohio
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*Prompt deliveries made from stocks in*
NEW YORK
BOSTON
PHILADELPHIA
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TRADE U MARK

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# Use Grasselli Grade Tri-Sodium Phosphate

for Safety—Economy—Efficiency. A mild alkaline salt for cleaning of felt and all general cleaning purposes. A trial will convince you of its merits.

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Silicate of Soda
Sulphuric Acid
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Acetate of Lead
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Los Angeles—4034 Bay St., San Francisco—274 Brannon St.

**GRASSELLI GRADE**
*A Standard Held High for 91 Years*

# Imports of Paper and Paper Stock

*(Continued from page 72)*

E. M. Sergeant & Co., Bergensfjord, Oslo, 150 bls. wood pulp.
Atterbury Bros., Inc., Bergensfjord, Oslo, 1271 bls. wood pulp.
Harriman Bros. & Co., Singapore Maru, Hamburg, 338 bls. wood pulp, 50 tons.
——, Singapore Maru, Hamburg, 256 bls. wood pulp, 51 tons.

WOOD FLOUR

State Chemical Co., N. Amsterdam, Rotterdam, 400 bags.
B. L. Soberski, Bergensfjord, Frederickstad, 1500 bags.

WOOD PULP BOARDS

Lagerloef Trading Co., City of Fairbury, Helsingfors, 46 rolls.

## BOSTON IMPORTS

WEEK ENDING JUNE 14, 1930

F. S. Webster, Scythia, Liverpool, 23 cs. tissue paper.
G. F. Malcolm, Scythia, Liverpool, 28 cs. tissue paper.
Bulkley, Dunton & Co., Consul, Olsson, ——, 3392 bls. wood pulp.
Bulkley, Dunton & Co., Kelkheim, ——, 2400 bls. wood pulp.
Bulkley, Dunton & Co., Eifel, ——, 2250 bls. wood pulp.

## PHILADELPHIA IMPORTS

WEEK ENDING JUNE 14, 1930

Bulkley, Dunton & Co., City of Fairbury, ——, 725 bls. wood pulp, 165 tons.
J. Andersen & Co., City of Fairbury, Wallvik, 1500 bls. sulphite, 285 tons.
Castle & Overton, Inc., West Pocasset, Bordeaux, 591 bls. rags.
J. A. Steer & Co., West Pocasset, Bordeaux, 28 bls. rags.
Katzenstein & Keene, Inc., West Pocasset, Bordeaux, 234 bls. rags.
National Vulcanized Fibre Co., West Pocasset, St. Nazaire, 262 bls. rags.
Katzenstein & Keene, Inc., West Pocasset, St. Nazaire, 137 bls. rags.
E. J. Keller Co., Inc., West Pocasset, ——, 606 bls. rags.
G. M. Graves & Co., Incemore, London, 57 coils old rope.
——, Incemore, London, 118 coils old rope.
W. J. Jones Co., Sarcoxie, Havre, 6 cs. wall paper.
Tradesmans National Bank, Sarcoxie, Havre, 46 bls. rags.
Phila. National Bank, Sarcoxie, Havre, 40 bls. rags.
Guaranty Trust Co., Sarcoxie, Havre, 3 bls. rags; 30 bls. bagging.
Corn Exchange Bank, Sarcoxie, Havre, 26 bls. rags.
Amtorg Trading Corp., Arizpa, Odessa, 2041 bls. rags.
Neidich Process Co., Odensholm, Helsingfors, 72 cs. tissue paper.
Lagerloef Trading Co., Odensholm, Helsingfors, 320 bls. sulphite.
Lagerloef Trading Co., Odensholm, Wiborg, 6353 bls. sulphite; 338 bls. sulphate.
Lagerloef Trading Co., Odensholm, Kotka, 320 bls. sulphate; 2638 bls. sulphite.
E. J. Keller Co., Inc., Gaasterdky, ——, 134 bls. rags.

## BALTIMORE IMPORTS

WEEK ENDING JUNE 14, 1930

Lagerloef Trading Co., City of Fairbury, Rauma, 7809 bls. wood pulp, 1404 tons.
Price & Pierce, Ltd., City of Fairbury, Wallvik, 1350 bls. sulphite, 225 tons; 2250 bls. sulphate, 375 tons.
Pagel, Horton & Co., Inc., City of Fairbury, Hernosand, 500 bls. sulphite, 100 tons.
Bulkley, Dunton & Co., City of Fairbury, ——, 750 bls. wood pulp, 150 tons.
Congoleum Nairn Co., West Pocasset, Bordeaux, 783 bls. rags.
Maryland Waste Co., Sarcoxie, Dunkirk, 12 bls. rags.
W. Steck & Co., Sarcoxie, Dunkirk, 65 bls. rags.
Bulkley, Dunton & Co., Kelkheim, ——, 4450 bls. wood pulp.
Bulkley, Dunton & Co., Toronto, ——, 1650 bls. wood pulp.
Bulkley, Dunton & Co., Burgerdyk, ——, 900 bls. wood pulp.

## NORFOLK IMPORTS

WEEK ENDING JUNE 14, 1930

Stora Kopperberg Corp., Odensholm, Stockholm, 76 rolls, news print.
Lagerloef Trading Co., Odensholm, Wiborg, 4160 bls. sulphite.
Parsons & Whittemore, Inc., Odensholm, Kotka, 47 rolls news print.
Virginian Paper Co., Inc., Odensholm, Kotka, 78 rolls news print.
W. M. Stone & Co., Odensholm, Kotka, 218 rolls news print.
Lagerloef Trading Co., Odensholm, Kotka, 5080 bls. sulphite; 133 rolls wood pulp boards.

## Monarch Marking System Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, June 16, 1930.—The Monarch Marking System Company of this city is planning extensions to its business and has decided to erect a branch factory in Los Angeles, Cal., where it has long been doing a thriving trade.

Business increases the past year, according to reports submitted to agents who recently assembled in this city, brought a sales total of $1,500,000.

The Los Angeles plant will be ready for operation by August 1, if the present progress is continued in building operations. It will be managed by Frank Hocker, Western sales manager.

Improved business in the Canadian sales area, where a separate company handles production and distribution, also was reported.

The Monarch Marking System Company, manufacturers of price tags for merchandise, completed the third unit of its Dayton plant within the past 12 months and now has one of the most modern establishments in the country.

## "The Centrifugal Pump"

"The Centrifugal Pump," compiled for Goulds by F. G. Switzer, Professor of Hydraulic Engineering, Cornell Universiay, is in every respect a practical handbook of data valuable to technical instructor, trained engineer and pump operator alike.

An outstanding feature of the bulletin is its clean, typographical arrangement for easy reading.

One of the most interesting chapters in the book is that on testing, where the reader is taken through a modern testing laboratory and shown, step by step, how centrifugal pumps are inspected and put in perfect operating condition before they leave the factory.

The user of pumps will also find much of interest in the many valuable curve charts the book contains.

Copies of "The Centrifugal Pump"—Bulletin 401—may be obtained from the publishers, Goulds Pumps, Incorporated, Seneca Falls, N. Y.

## News Print Production for May

Production of news print in Canada, during May, 1930, amounted to 237,681 tons and shipments to 239,034 tons, according to the News Print Service Bureau. Production in the United States was 118,093 tons and shipments 114,702 tons, making a total United States and Canadian news print production of 355,774 tons and shipments of 353,736 tons. During May, 25,149 tons of news print were made in Newfoundland and 742 tons in Mexico, so that the total North American production for the month amounted to 381,665 tons.

The Canadian mills produced 16,131 tons less in the first five months of 1930 than in the first five months of 1929, which was a decrease of 1 per cent. The United States output was 6,538 tons or 1 per cent less than the first five months of 1929. Production in Newfoundland was 14,135 tons or 14 per cent more in the first five months of 1930 than in 1929 and in Mexico 612 tons less, making a total decrease of 9,146 tons.

During May, the Canadian mills operated at 75.2 per cent of rated capacity, United States mills at 80.4 per cent and Newfoundland mills at 101.1 per cent. Stock of news print paper at Canadian mills totaled 44,409 tons at the end of May, and at United States mills 27,924 tons, making a combined total of 72,333 tons which was equivalent to 4.3 days' average production.

## Crown-Willamette To Build Dike

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 12, 1930.—Crown-Willamette Paper Company is asking permission to construct a dike from the mainland to Lady Island across Camas slough at Camas, Wash. The dike would be between 2,000 and 3,000 feet long according to report and would have a culvert 10 feet in diameter to permit the passage of a certain amount of water. It would be used to create a storage pond for the mill and to protect the Washington shore from erosion. Senator Wesley L. Jones has wired the chamber of commerce at Vancouver asking whether there would be any objection.

## Reduces felt replacement costs

WASHING felts with strong alkalies and similar materials is certain to injure the fibres . . . shorten the life of the felts.

You can get longer service from felts and reduce replacement costs appreciably, by washing your felts with Oakite. This effective material cleans *safely*, removes every particle of dirt, sizing and other foreign matter without harming fibres in the least. It rinses quickly and completely, leaving felts soft and as absorbent as new.

Our nearby Service Man will gladly call at your plant and show you how easily, quickly and thoroughly felts are washed the Oakite way. Just drop us a line. No obligation.

*Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the United States and Canada*

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**OAKITE**
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*Industrial Cleaning Materials and Methods*

## Evidence on Paper

EVIDENCE has been collected regarding the values of silicate of soda in the manufacture of various kinds of paper. The "witnesses" are satisfied users of Quartz Quality Silicates for periods of 10, 20 and 30 years.

Their "testimony" has been recorded in certified reports of surveys conducted by an independent firm of auditing engineers. Most of this evidence is combined in a 12 page booklet which we shall be happy to mail to you without obligation.

**Philadelphia Quartz Company**
General Offices: 121 S. Third St., Philadelphia
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1864 1930

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**for every grade of**

## PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

**Seamless felts for fast running.**
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**Special felts to meet every condition.**
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**KNOX WOOLEN COMPANY**
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**SOLD BY**
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## LINDSAY SPIRAL WEAVE FOURDRINIER WIRES

**prevent grooving of Seams on machines not equipped with oscillating Suction Boxes. This lengthens the life of wires and increases their production.**

## THE LINDSAY WIRE WEAVING CO.

**14025 Aspinwall Ave.**
**CLEVELAND, OHIO**

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 18, 1930.

Trading in the local paper market was only moderately active during the past week. Most of the business transacted was along routine lines. Inquiries for future requirements are fairly numerous. Sales forces of the leading paper organizations are pursuing a strenuous campaign for orders. Prices are steadier than for some time past and the future outlook is more encouraging.

Conditions in the news print market are fairly satisfactory. Production in the United States and British North America is being maintained at approximately 73 per cent of total capacity, according to information gathered by the News Print Service Bureau. Stocks at the mills at the end of May totaled 72,333 tons, equivalent to 4.3 days average production.

Paper board production is proceeding in sufficent volume to take care of current needs. The price situation is practically unchanged. The fine paper market is in a sound position, with prices continuing steady. Tissues are going forward at a good pace. Some improvement was noticed in the coarse paper market. Prices are generally holding to formerly quoted levels.

Steadiness prevails in the ground wood market although the prevailing demand is rather light. Contract shipments are well up to aveage for the time of year. There are several inquiries for future needs around. Quotations on both domestic and imported mechanical pulp are generally steady and unchanged and shading is infrequent.

### Chemical Pulp

Demand for both imported and domestic chemical pulp is seasonal. No further recessions have been recorded on the kraft grades, which are somewhat steadier. Imported bleached sulphite is now being offered at from $3.00 to $4.25; easy bleaching sulphite at from $2.70 to $2.90 and No. 1 strong unbleached at from $2.40 to $2.65, on dock, Atlantic ports.

### Old Rope and Bagging

The old rope market was quiet during the past week. Demand for domestic and foreign old manila rope was restricted. Mixed rope is moving in fair volume. Quotations on old rope are practically unchanged. The bagging market was less active than of late. Gunny and scrap are still fairly steady but roofing bagging has been neglected. No radical price changes were reported.

### Rags

Some improvement was noticed in the domestic rag market. Cotton cuttings were in slightly better request than of late. White rags are moving in satisfactory volume. Mixed rags are fairly steady. Little interest is being exhibited in the roofing grades. The imported rag market is dull and prices abroad are still considered too high.

### Waste Paper

Board mill interest in the lower grades of paper stock is still restricted and the price situation is decidedly easy. The better grades of waste paper, however, are exhibiting a strong undertone. Hard white envelope cuttings are in excellent request and, with offerings rather limited, prices are firm. Soft white shavings are also in good demand. Book stock continues fairly steady.

### Twine

Most of the business transacted in the twine market was along routine lines. Inquiries for future needs are fairly numerous. Supplies are moving into consumption at a normal pace for the season. The outlook for the future is considered fairly promising, in most quarters. Prices of the various grades of twine remain unchanged, in most instances.

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## Boiler Scale Elimination

Engineers and executives of industrial plants and central stations who are faced with the problem of boiler scale elimination will find much helpful information in a new bulletin which has just been published by The Griscom-Russell Company.

This bulletin fully discusses the functions, applications and advantages of evaporators for distilling boiler-feed make-up water. One of the topics of particular interest is the recently developed "Reducing Valve Evaporator System" which permits the economical application of evaporators to industrial plants requiring considerable steam for process work. This system, which was originated by The Griscom-Russell Company and is fully explained for the first time, provides process steam and boiler feed make-up at one operation and extends the economical use of evaporators to many plants requiring a high percentage of boiler-feed make-up.

The bulletin further discusses in detail the history of evaporators, the benefits of distilled boiler-feed and the different types of evaporator systems that have been found most advantageous for various operating conditions. The many illustrations include photographs of installations and G-R Evaporator designs, together with diagrams showing how evaporators may be associated with other plant apparatus for efficient operation. A heat Benefit Analysis in tabular form, gives definite data on the saving that will be effected by an evaporator system in a typical plant.

As The Griscom-Russell Company has long pioneered in the development of evaporators for marine, central station, and industrial plant use, and has originated many of the types of evaporator systems that are now accepted as standard practice, the principles and designs discussed in this bulletin are of exceptional interest and authority. Copies may be obtained by addressing The Griscom-Russell Company, 285 Madison avenue, New York City.

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## Mrs. Lilian H. Howard Leaves $583,000

DAYTON, Ohio, June 16, 1930.—Howell H. Howard, executor of the estate of the late Mrs. Lilian H. Howard, some time ago filed a report in the Probate Court listing assets at more than $583,000 and disbursements exceeding $575,000, leaving a balance of $7,335.44 due the estate.

The inheritance tax paid on the estate of Mrs. Howard, who left a large interest in paper enterprises, was the largest paid in this county for some time, the amount being $128,633.07.

Mrs. Howard, the wife of Colonel Maxwell H. Howard, owner of paper mills in Dayton, Franklin and Urbana, Ohio, was a member of a highly-respected Cincinnati family, her late father having at one time been identified with mill and other business enterprises in Southern Ohio. Mrs. Howard's death occurred in New York where she had resided for some time though she never gave up her Dayton home.

# WOOD PULPS

All Grades

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CANADA CEMENT BUILDING
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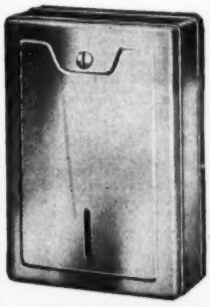
Hydraulic Presses and Pumps

*Successors to the Granger Foundry & Machine Co.*

## The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

# GRIFFITH-HOPE



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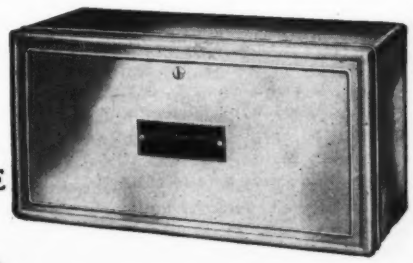
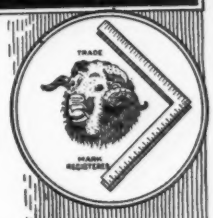
For Towels, Toilet, Napkins, Etc.



GRIFFITH-HOPE CO., West Allis, Wisc.

# 3 FEATURES of our "TOP FELTS for BOARD MACHINES"

A Trial Felt for Your Machines Will Prove These Facts.



## THE WATERBURY FELT CO., SKANEATELES FALLS, N.Y.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 18, 1930.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. Both the pulp and the powder are in seasonal request. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market was moderately active. Shipments against contract are moving in a normal manner for the season. Prices are holding to previously quoted levels, in most instances. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—Trading in the casein market was light. Prices remain unchanged. Domestic standard ground is quoted at 13½ cents and finely ground at 15 cents per pound. Argentine standard ground is selling at 13½ cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is well up to average. Prices remain unchanged. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is in a sound position. Contract shipments are moving in satisfactory volume. Prices remain unaltered. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Demand for chlorine was only moderately active during the past week. Shipments against contract were fairly satisfactory for the time of year. Prices are generally holding to schedule. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Further weaknesses developed in the rosin market. Prices again declined. The grades of gum rosin used in the paper mills are quoted at from $6.75 to $6.80 per 280 pounds, in barrels, at yard. Wood rosin is offered at from $6.25 to $6.70 per 280 pounds, in barrels, on dock.

SALT CAKE.—The salt cake market is exhibiting a strong undertone. Supplies are moving into consumption in good volume. Prices are holding to schedule. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Offerings of soda ash are ample for current requirements. Contract shipments are going forward in normal volume for the season. Prices are generally unaltered. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—The starch market continues fairly active. Shipments against contract are going forward to the mills at a normal pace. Inquiries for future needs are fairly numerous. Special paper making starch is quoted at $3.72 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Consumption of sulphate of alumina is being maintained in good volume. Prices are generally holding to previously quoted levels. Commercial grades are still quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is displaying a steady trend. Sulphur is still quoted at $18 per ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over the same period. On spot and nearby car loads the quotation is $21 per ton.

TALC.—Irregular conditions were experienced in the talc market. Prices, however, are holding to schedule, without difficulty. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers | 11.00 | @ | 38.00 |
| Bonds | 9.00 | @ | 53.25 |
| Writings— | | | |
| Extra Superfine | 14.00 | @ | 32.00 |
| Superfine | 14.00 | @ | 32.00 |
| Tub sized | 10.00 | @ | 15.00 |
| Engine sized | 8.00 | @ | 11.00 |
| Book, Cased— | | | |
| S. & S. C. | 6.00 | @ | 7.50 |
| M. F. | 5.75 | @ | 7.00 |
| Coated and Enamel | 7.50 | @ | 12.00 |
| Lithograph | 7.50 | @ | 12.00 |
| Tissues—Per Ream— | | | |
| White No. 1 | .75 | @ | 1.00 |
| Anti-Tarnish | 1.35 | @ | 1.90 |
| Colored | 1.00 | @ | 2.00 |
| White No. 2 | .75 | @ | .80 |
| Kraft | 1.00 | @ | 1.10 |
| Manila | .75 | @ | .80 |
| Kraft— | | | |
| No. 1 Domestic | 5.75 | @ | 6.25 |
| No. 2 Domestic | 3.75 | @ | 5.00 |
| Southern | 3.25 | @ | 4.75 |
| Imported | 6.50 | @ | 7.00 |
| Manila— | | | |
| No. 1 Jute | 9.00 | @ | 9.25 |
| No. 2 Jute | 7.75 | @ | 8.50 |
| No. 1 Wood | 4.75 | @ | 5.25 |
| No. 2 Wood | 4.00 | @ | 4.50 |
| Butchers | 3.75 | @ | 4.25 |
| Fibre Papers— | | | |
| No. 1 Fibre | 5.00 | @ | 5.50 |
| No. 2 Fibre | 4.75 | @ | 5.25 |
| Common Bogus | 2.75 | @ | 3.00 |
| Screenings | 3.00 | @ | 3.25 |
| Card Middles | 4.00 | @ | 5.00 |
| Glassine— | | | |
| Bleached, basis 25 lbs. | 13.00 | @ | 16.00 |
| Bleached, basis 20 lbs. | 15.00 | @ | 16.00 |

(Delivered New York)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Rolls, contract | 62.00 | @ | — |
| Rolls, spot | 62.00 | @ | — |
| Sheets | 67.00 | @ | — |
| Side Runs | 47.00 | @ | 52.00 |
| Boards—per ton— | | | |
| News | 37.50 | @ | — |
| Straw | 50.00 | @ | — |
| Chip | 35.00 | @ | — |
| Binders' Boards | 65.00 | @ | 70.00 |
| Wood Pulp | 90.00 | @ | 95.00 |
| 65 Test Jute Liner | 37.50 | @ | 40.00 |
| 85 Test Jute Liner | 42.50 | @ | 45.00 |
| Sgl. Mla. Ll. Chip | 47.50 | @ | 50.00 |

## Mechanical Pulp

(On Dock)

| | | | |
|---|---|---|---|
| No. 1 Imported— | | | |
| Moist | 28.00 | @ | 30.00 |
| Dry | 30.00 | @ | 32.00 |

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| No. 1 Domestic | 26.00 | @ | 30.00 |

## Chemical Pulp

(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| Sulphite (Imported)— | | | |
| Bleached | 3.00 | @ | 4.25 |
| Easy Bleaching | 2.70 | @ | 2.90 |
| No. 1 strong unbleached | 2.40 | @ | 2.65 |
| Mitscherlich unbleached | 2.50 | @ | 2.85 |
| No. 2 strong unbleached | 2.35 | @ | 2.50 |
| No. 1 Kraft | 1.75 | @ | 2.15 |
| No. 2 Kraft | 1.65 | @ | 1.85 |
| Sulphate— | | | |
| Bleached | 3.40 | @ | 3.85 |

(F. o. b. Pulp Mill)

| | | | |
|---|---|---|---|
| Sulphite (Domestic)— | | | |
| Bleached | 3.00 | @ | 4.75 |
| Easy Bleaching Sulphite | 2.55 | @ | 2.85 |
| News Sulphite | 2.35 | @ | 2.60 |
| Mitscherlich | 3.00 | @ | 3.25 |
| Kraft (Domestic) | 2.10 | @ | 3.30 |
| Soda Bleached | 2.90 | @ | 3.20 |

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | 9.25 | @ | 9.75 |
| New White, No. 2 | 7.00 | @ | 7.50 |
| Silesias No. 1 | 7.50 | @ | 8.00 |
| New Unbleached | 10.50 | @ | 11.00 |
| New Blue Prints | 5.25 | @ | 5.50 |
| New Soft Blacks | 5.25 | @ | 5.75 |
| Blue Overall | 7.25 | @ | 7.75 |
| Washables | 4.75 | @ | 5.25 |
| Fancy | 5.50 | @ | 6.00 |
| Mixed Khaki Cuttings | 4.75 | @ | 5.25 |
| Pink Corset Cuttings | 8.00 | @ | 8.50 |
| O D. Khaki Cuttings | 5.15 | @ | 5.75 |
| Men's Corduroy | 3.75 | @ | 4.25 |
| New Mixed Blacks | 3.50 | @ | 3.75 |

Old Rags

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | 5.50 | @ | 6.00 |
| Miscellaneous | 4.50 | @ | 5.00 |
| White, No. 2— | | | |
| Repacked | 3.00 | @ | 3.50 |
| Miscellaneous | 2.50 | @ | 2.75 |
| St. Soiled, White | 2.00 | @ | 2.15 |
| Thirds and Blues— | | | |
| Repacked | 2.25 | @ | 2.50 |
| Miscellaneous | 1.75 | @ | 2.00 |
| Black Stockings | 3.25 | @ | 3.75 |
| Roofing Rags— | | | |
| Cloth Strippings | 1.70 | @ | 1.80 |
| No. 1 | 1.70 | @ | 1.80 |
| No. 2 | 1.50 | @ | 1.60 |
| No. 3 | 1.30 | @ | 1.40 |
| No. 4 | 1.25 | @ | 1.35 |
| No. 5A | .90 | @ | 1.05 |

## Foreign Rags

New Rags

| | | | |
|---|---|---|---|
| New Dark Cuttings | 2.50 | @ | 3.00 |
| New Mixed Cuttings | 2.75 | @ | 3.25 |
| New Light Silesias | 7.00 | @ | 7.50 |
| Light Flannelettes | 7.50 | @ | 8.00 |
| Unbleached Cuttings | 10.00 | @ | 11.00 |
| New White Cuttings | 10.00 | @ | 10.50 |
| New Light Oxfords | 7.00 | @ | 7.50 |
| New Light Prints | 5.50 | @ | 6.50 |

Old Rags

| | | | |
|---|---|---|---|
| No. 1 White Linens | 7.25 | @ | 8.00 |
| No. 2 White Linens | 5.75 | @ | 6.75 |
| No. 3 White Linens | 4.75 | @ | 5.25 |
| No. 4 White Linens | 3.00 | @ | 3.50 |
| No. 1 White Cotton | 5.50 | @ | 6.50 |
| No. 2 White Cotton | 2.75 | @ | 3.75 |
| No. 3 White Cotton | 3.00 | @ | 4.00 |
| No. 4 White Cotton | 1.95 | @ | 2.15 |
| Extra Light Prints | 2.75 | @ | 3.00 |
| Ord. Light Prints | 2.25 | @ | 2.50 |
| Med. Light Prints | 1.95 | @ | 2.10 |
| Dutch Blue Cottons | 2.15 | @ | 2.30 |
| French Blue Linens | 2.65 | @ | 2.75 |
| German Blue Linens | 2.30 | @ | 2.50 |
| German Blue Cottons | 2.00 | @ | 2.10 |
| Checks and Blues | 1.85 | @ | 2.00 |
| Lindsay Garments | 1.75 | @ | 1.80 |
| Dark Cottons | 1.35 | @ | 1.40 |
| Old Shopperies | 1.25 | @ | 1.30 |
| New Shopperies | 1.20 | @ | 1.25 |
| French Blues | 2.00 | @ | 2.10 |

## Old Rope and Bagging

(Prices to Mill f. o.b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | 1.65 | @ | 1.75 |
| Domestic | 1.65 | @ | 1.75 |
| Wool Tares, light | 1.60 | @ | 1.65 |
| Wool Tares, Heavy | 1.60 | @ | 1.70 |
| Bright Bagging | 1.60 | @ | 1.70 |
| Small Mixed Rope | 1.25 | @ | 1.40 |
| Manila Rope— | | | |
| Foreign | 3.50 | @ | 3.75 |
| Domestic | 3.75 | @ | 4.25 |
| New Burlap Cut | 2.50 | @ | 2.75 |
| Hessian Jute Threads— | | | |
| Foreign | 3.50 | @ | 4.00 |
| Domestic | 3.25 | @ | 3.50 |

## Old Waste Papers

(F. o. b. New York)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| Hard, white, No. 1 | 3.00 | @ | 3.25 |
| Hard, white, No. 2 | 2.40 | @ | 2.55 |
| Soft, white, No. 1 | 2.65 | @ | 2.75 |
| White envelope cuttings | 2.90 | @ | 3.10 |
| Flat Stock— | | | |
| Stitchless | 1.40 | @ | 1.50 |
| Overissue Mag. | 1.40 | @ | 1.50 |
| Solid Flat Book | 1.30 | @ | 1.40 |
| Crumpled No. 1 | 1.00 | @ | 1.10 |
| Solid Book Ledger | 2.00 | @ | 2.10 |
| Ledger Stock | 1.30 | @ | 1.40 |
| New B. B. Chips | .35 | @ | .45 |
| Manilas— | | | |
| New Env. Cut. | 2.40 | @ | 2.60 |
| New Cuttings | 1.50 | @ | 1.75 |
| Extra No. 1 old | 1.25 | @ | 1.35 |
| Print | .60 | @ | .65 |
| Bogus Wrapper | .60 | @ | .65 |
| Container | .40 | @ | .50 |
| Old Kraft Machine— | | | |
| Compressed bales | 1.50 | @ | 1.60 |
| News— | | | |
| No. 1 White News | 1.75 | @ | 1.85 |
| Strictly Overissue | .50 | @ | .55 |
| Strictly Folded | .40 | @ | .45 |
| No. 1 Mixed Paper | .20 | @ | .25 |
| Common Paper | .15 | @ | .20 |

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### Twines
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Cotton— | | | |
| No. 1 | .39 | @ | .40 |
| No. 2 | .37 | @ | .38 |
| No. 3 | .36 | @ | .37 |
| B. C., 18 basis | .38 | @ | .40 |
| A. B. Italian, 18 basis | .48 | @ | .53 |
| Finished Jute— | | | |
| Dark 18 basis | .24 | @ | .25 |
| Light 18 basis | .27 | @ | .28 |
| Jute Wrappings, 3-6 Ply— | | | |
| No. 1 | .19 | @ | .21 |
| No. 2 | .18 | @ | .20 |
| Tube Rope— | | | |
| 4-ply and larger | .16 | @ | .17 |
| Fine Tube Yarn— | | | |
| 5-ply and larger | .21 | @ | .25 |
| 4-ply | .25 | @ | .29 |
| 3-ply | .28 | @ | .32 |
| Unfinished India— | | | |
| Basis | .13 | @ | .14 |
| Paper Makers Twine | | | |
| Balls | .11 | @ | .12 |
| Box Twine, 2-3 ply | .15 | @ | .17 |
| Jute Rope | .17 | @ | .19 |
| Amer. Hemp, 6 | .29 | @ | .31 |
| Sisal Hay Rope— | | | |
| No. 1 Basis | .16 | @ | .18 |
| No. 2 Basis | .14 | @ | .16 |
| Sisal Lath Yarn— | | | |
| No. 1 | .14 | @ | .16 |
| No. 2 | .12 | @ | .14 |
| Manila Rope | .22 | @ | .24 |

## CHICAGO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Rag Bond | .30 | @ | .53¼ |
| Water Marked Sulphite Bond | .09 | @ | .12 |
| Sulphite Bond | .06¾ | @ | .11 |
| Superfine writing | .18 | @ | .24 |
| No. 1 fine writing | .14 | @ | .18 |
| No. 2 fine writing | .12 | @ | .14 |
| No. 3 fine writing | .08½ | @ | .12 |
| No. 1 M. F. Book | .06½ | @ | .07¼ |
| No. 2 M. F. Book | .05¼ | @ | .06¼ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07½ | @ | .12 |
| Coated Label | .07½ | @ | .10 |
| No. 1 Manila | .04¾ | @ | .05¾ |
| No. 1 Fibre | .04¾ | @ | .05¼ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .04 | @ | .04½ |
| No. 1 Kraft | .06¼ | @ | .06½ |
| Southern Kraft | 4.25 | @ | 4.50 |
| No. 2 Kraft | .04 | @ | .04¼ |
| Wood Tag Boards | .04¼ | @ | .06½ |
| Sulphite Sreenings | .03 | @ | .03¼ |
| Manila Tissue— | | | |
| 24x36 Sheet | .07 | @ | .07¼ |
| White Tissue— | | | |
| 20x30 Sheet | .07¼ | @ | .07½ |
| (Delivered Central Territory) | | | |
| News, per ton— | | | |
| Rolls, contract | 62.00 | @ | — |
| Sheets | 67.00 | @ | — |
| Boards, per ton— | | | |
| Plain Chip | 37.50 | @ | 42.50 |
| Solid News | 47.50 | @ | — |
| Solid News | 40.00 | @ | 45.00 |
| Manila Lined Chip | 50.00 | @ | 55.00 |
| Container Lined— | | | |
| 85 Test | 65.00 | @ | 70.00 |
| 100 Test | 70.00 | @ | — |

### Old Papers
(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White Env. Cut- | 2.35 | @ | 2.40 |
| No. 1 Soft Shavings | 2.10 | @ | 2.15 |
| No. 1 Mixed | .60 | @ | .70 |
| No. 2 Mixed | .50 | @ | .60 |
| Ledger & Writings | 1.25 | @ | 1.35 |
| Solid Books | 1.05 | @ | 1.10 |
| Blanks | 1.60 | @ | 1.65 |
| Krafts | 1.65 | @ | 1.75 |
| New Kraft Cuts | 2.15 | @ | 2.25 |
| Manila Envelope Cuttings | 1.75 | @ | 1.80 |
| Ex. No. 1 Manila | 1.30 | @ | 1.45 |
| Print Manila | .60 | @ | .70 |
| Folded News (over-issue | .50 | @ | .60 |
| Old Newspapers— | | | |
| No. 1 | .60 | @ | .65 |
| No. 2 | .50 | @ | .55 |
| Mixed Papers— | | | |
| No. 1 | .45 | @ | .50 |
| Roofing Stocks— | | | |
| (F. o. b. Chicago, net cash) | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bonds | .05 | @ | .40 |
| Ledgers | .08 | @ | .40 |
| Writings— | | | |
| Superfine | .12½ | @ | .18 |
| Extra fine | .18 | @ | .22 |
| Fine | .17 | @ | .26 |
| Fine, No. 2 | .15 | @ | .25 |
| Fine, No. 3 | .09 | @ | .20 |
| Book, M. F. | .05 | @ | .07 |
| Book, S. S. & C. | .05 | @ | .07½ |
| Book, Coated | .09 | @ | .16 |
| Coated Lithograph | .07 | @ | .11 |
| Label | .07 | @ | .11 |
| No. 1 Jute Manila | .07 | @ | .09 |
| Manila Sul., No. 1 | .04 | @ | .05½ |
| Manila No. 2 | .03 | @ | .04 |
| No. 2 Kraft | .03¾ | @ | .04¼ |
| No. 1 Kraft | .05¾ | @ | .06¾ |
| Common Bogus | .03½ | @ | .04 |
| (Delivered Philadelphia) | | | |
| News Print Rolls | 62.00 | @ | — |
| Straw Board | 52.50 | @ | 70.00 |
| News Board | 37.50 | @ | 38.50 |
| Chip Board | 32.50 | @ | 35.00 |
| Wood Pulp Board | 85.00 | @ | 95.00 |
| Binder Boards— | | | |
| No. 1, per ton | 75.00 | | |
| No. 2, per ton | 70.00 | | |
| Carload lots | 68.00 | @ | 70.00 |
| Tarred Felts— | | | |
| Regular | 55.50 | @ | 57.00 |
| Slaters (per roll) | .84 | @ | .94 |
| Best Tarred, 1-ply (per roll) | 1.95 | @ | 2.10 |
| Best Tarred, 2-ply (per roll) | 1.50 | @ | 1.60 |
| Best Tarred, 3-ply | 2.00 | @ | 2.25 |

### Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | .10½ | @ | .11 |
| New White, No. 2 | .07 | @ | .07½ |
| Light Silesias | .07 | @ | .07½ |
| Silesias, No. 1 | .07 | @ | .09 |
| Black Silesia, soft | .05 | @ | .05½ |
| New Unbleached | .10½ | @ | .11 |
| Washable, No. 1 | .04½ | @ | .05 |
| Blue Overall | .07½ | @ | .08 |
| Cottons—According to grades— | | | |
| Washable, No. 2 | .03 | @ | — |
| New Blue | .03 | @ | .03½ |
| Fancy | .05½ | @ | .06 |
| New Black Soft | .05 | @ | .05¾ |
| New Light Seconds | .02½ | @ | .03 |
| New Dark Seconds | 1.85 | @ | 2.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D. | .05½ | @ | .05¾ |
| No. 2 Mixed | .04½ | @ | .04¾ |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08½ | @ | .09 |
| New Black Mixed | .03¾ | @ | .04½ |

### Bagging
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.75 | @ | — |
| Manila Rope | 3.50 | @ | 4.00 |
| Sisal Rope | 1.50 | @ | — |
| Mixed Rope | 1.10 | @ | 1.25 |
| Scrap Burlaps— | | | |
| No. 1 | 1.50 | @ | 1.60 |
| No. 2 | 1.10 | @ | 1.20 |
| Wool Tares, heavy | 3.00 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| No. 1, New Light Burlap | 2.50 | @ | 2.75 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.65 | @ | 2.75 |
| No. 2 Hard White | 2.30 | @ | 2.50 |
| No. 1 Soft White | 2.25 | @ | 2.50 |
| No. 2 Soft White | 1.40 | @ | 1.60 |
| No. 1 Mixed | .90 | @ | 1.00 |
| No. 2 Mixed | .60 | @ | .70 |
| Solid Ledger Stock | 1.55 | @ | 1.65 |
| Writing Paper | 1.05 | @ | 1.25 |
| No. 1 Books, heavy | 1.00 | @ | 1.20 |
| No. 2 Books, light | .90 | @ | 1.00 |
| No. 1 New Manila | 2.15 | @ | 2.30 |
| No. 1 Old Manila | 1.50 | @ | 1.60 |
| Print Manila | .50 | @ | .60 |
| Container Manila | .45 | @ | .50 |
| Old Kraft | 1.35 | @ | 1.40 |
| Common Paper | .25 | @ | .35 |
| No. 1 Mixed Paper | .25 | @ | .30 |
| Straw Board, Chip | .35 | @ | .40 |
| Binders Board, Chip | .35 | @ | .45 |
| Overissue News | .45 | @ | .50 |
| Old Newspaper | .25 | @ | .30 |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked | 4.25 | @ | 4.50 |
| Miscellaneous | 3.50 | @ | 3.75 |
| M. G. | 6.00 | @ | — |
| Thirds and Blues— | | | |
| Repacked | 2.00 | @ | 2.25 |
| Miscellaneous | 1.60 | @ | 1.80 |
| Black Stockings (Export) | 3.90 | @ | 4.25 |
| Roofing Stock— | | | |
| Foreign No. 1 | 1.25 | @ | 1.30 |
| Repacked | .80 | @ | .90 |
| No. 2 | .70 | @ | .75 |
| No. 3 (Roofing) | .30 | @ | .40 |
| No. 4 | .30 | @ | .40 |
| No. 5A | .70 | @ | .75 |
| B | .40 | @ | .60 |
| C | .25 | @ | .30 |

## BOSTON

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers— | | | |
| Sulphite | .07½ | @ | .12½ |
| Rag content | .15 | @ | .30 |
| All rag | .38 | @ | .52½ |
| Bonds— | | | |
| Sulphite | .06½ | @ | .11½ |
| Rag content | .15 | @ | .30 |
| All rag | .36½ | @ | .65 |
| Writings | .06½ | @ | .20 |
| Superfines | .11 | @ | .31 |
| Book, Super | .06 | @ | .09 |
| Book, M. F. | .05½ | @ | .08½ |
| Book, Coated | .08½ | @ | .18 |
| Coated Litho | .09 | @ | .12 |
| Label | .09½ | @ | .15 |
| Jute Manila No. 1 | .11 | @ | .13 |
| Manila, Sul. No. 1 | .04¾ | @ | .06¼ |
| Manila, Sul. No. 2 | .03¾ | @ | .04½ |
| No. 1 Kraft | .04¾ | @ | .06 |
| No. 2 Kraft | .03¾ | @ | .05 |
| Southern Kraft | .03¾ | @ | .04¼ |
| (F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.) | | | |
| Common Bogus | .02 | @ | .02¾ |
| Delivered New England points | | | |
| News Print Rolls | 61.50 | @ | — |
| Straw Boards, rolls | .009 | | 52.50 |
| Straw Board in Sheets, basis 35s to 70s | 54.50 | @ | 55.00 |
| Filled News Board | 37.50 | @ | 40.00 |
| Chip Board | 35.00 | @ | 37.50 |
| Single Manila Lined Chip | 47.50 | @ | 52.50 |
| Single White, Patent Coated Newsboard Bender | 65.00 | @ | 80.00 |
| Wood Pulp Board | 75.00 | @ | 80.00 |
| Binder Boards | 70.00 | @ | 75.00 |
| (F. o. b. Mill) | | | |
| Tarred Felts— | | | |
| Regular, carload lots | 65.00 | @ | — |

### Old Papers
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.25 | @ | 3.75 |
| No. 2 Hard White | 2.60 | @ | 2.90 |
| No. 1 Soft White | 2.50 | @ | 2.60 |
| No. 1 Mixed | 1.10 | @ | 1.15 |
| No. 2 Mixed | .85 | @ | .90 |
| Solid Ledger Stock | — | @ | 2.25 |
| No. 1 Books, Heavy | 1.30 | @ | — |
| No. 1 Books, Light | 1.05 | @ | — |
| Manila Env. Cuttings | 2.00 | @ | 2.25 |
| No. 1 Old Manila | .90 | @ | 1.00 |
| White Blank News | 1.50 | @ | 1.60 |
| Old Kraft | 1.40 | @ | 1.50 |
| Print Manila | .75 | @ | .80 |
| No. 1 Mixed Paper | .20 | @ | — |
| Overissue News | .40 | @ | .50 |
| Old Newspapers | .35 | @ | .40 |
| Box Board, Chip | .45 | @ | .50 |
| Corrugated Boxes | — | @ | .40 |

### Bagging
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | — | @ | 1.75 |
| Domestic | 1.45 | @ | — |
| Manila Rope— | | | |
| Foreign | 3.25 | @ | 3.50 |
| Domestic | 3.75 | @ | 4.00 |
| Transmission Rope | 2.25 | @ | 2.40 |
| Mixed Strings | .90 | @ | — |
| Jute Wool Strings | .90 | @ | 1.00 |
| Jute Carpet Threads | 1.05 | @ | 1.15 |
| Scrap Burlaps | 1.25 | @ | 1.40 |
| Scrap Sisal | 1.50 | @ | 1.75 |
| Scrap Sisal for shredding | 1.75 | @ | 2.00 |
| Wool Tares, heavy | 1.60 | @ | — |
| New Burlap Cutting | 1.75 | @ | 2.00 |
| Australian Wool Pouches | 2.50 | @ | 3.00 |

### Domestic Rags (New)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White No. 1. | .08 | @ | .08½ |
| Silesias No. 1 | .06 | @ | .06¼ |
| New Unbleached | — | @ | .09¼ |
| Fancy | .04 | @ | .04½ |
| Washable | .04 | @ | .04½ |
| Cottons—According to grades | | | |
| Blue Overalls | .06¼ | @ | .06¼ |
| New Black, soft | .04 | @ | .04¼ |
| Khaki Cuttings | .04 | @ | .04¼ |
| O. D. Khaki | .05 | @ | — |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08 | @ | .08½ |

### Domestic Rags (Old)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas | .04½ | @ | — |
| White No. 1— | | | |
| Repacked | 4.75 | @ | 5.25 |
| Miscellaneous | 5.00 | @ | — |
| White No. 2— | | | |
| Repacked | .04½ | @ | .05 |
| Miscellaneous | .03½ | @ | .04 |
| Twos and Blues | 2.75 | @ | 3.00 |
| Thirds and Blues— | | | |
| Repacked | 2.25 | @ | 2.50 |
| Miscellaneous | 1.75 | @ | 1.90 |
| Black Stockings | — | @ | 4.00 |
| Roofing Stock— | | | |
| No. 1 | 1.25 | @ | 1.50 |
| No. 2 | .90 | @ | 1.00 |
| No. 3 | .85 | @ | .90 |
| No. 4 | .75 | @ | .85 |

### Foreign Rags
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons | 4.25 | @ | — |
| New No. 1 Shirt Cuttings | 8.50 | @ | 9.00 |
| Dutch Blues | 2.00 | @ | 2.12½ |
| Lace Curtains | 4.50 | @ | 4.75 |
| New Checks & Blues | 4.25 | @ | 4.60 |
| Old Fustians | 1.90 | @ | 2.00 |
| Old Linsey Garments | 1.30 | @ | 1.40 |

## TORONTO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bond— | | | |
| No. 1 Sulphite | .12½ | @ | — |
| No. 2 Sulphite | .10¾ | @ | — |
| No. 1 Colored | .13½ | @ | — |
| No. 2 Colored | .11¾ | @ | — |
| Ledgers (sulphite) | — | @ | — |
| Ledgers, No. 1 | .36 | @ | — |
| Ledgers, No. 2 | .27 | @ | — |
| Writing | .09½ | @ | .10 |
| Book— | | | |
| No. 1 M. F. (carloads) | 7.50 | @ | — |
| No. 2 M. F. (carloads) | 7.25 | @ | — |
| No. 3 M. F. (carloads) | 7.00 | @ | — |
| No. 1 S. C. (carloads) | 8.00 | @ | — |
| No. 2 S. C. (carloads) | 7.75 | @ | — |
| No. 3 S. C. (carloads) | 7.50 | @ | — |
| No. 1 Coated and Litho | 13.25 | @ | — |
| No. 2 Coated and Litho | 12.25 | @ | — |
| No. 3 Coated and Litho | 10.00 | @ | 11.50 |
| Coated tinted | 14.50 | @ | — |
| Wrapping— | | | |
| Rag Brown | 4.95 | @ | — |
| White Wrap | 5.25 | @ | — |
| "B" Manila | 5.00 | @ | — |
| No. 1 Manila | 5.40 | @ | — |
| Fiber | 5.40 | @ | — |
| Kraft, M. F. | 5.90 | @ | — |
| White, No. 2 | 2.00 | @ | 2.25 |

(Delivered Toronto)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Rolls (contract) | 61.50 | @ | 62.00 |
| Sheets | 67.00 | @ | — |

### Pulp
(F. o. b. Mill)

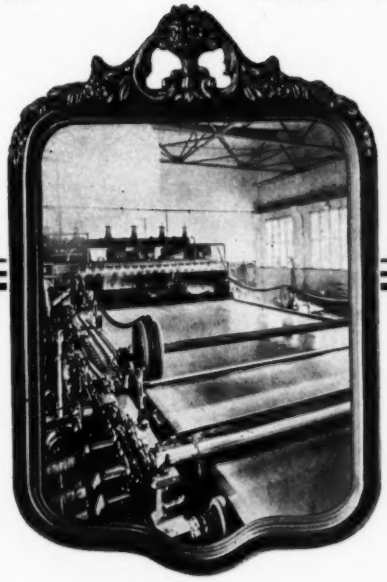
| | | | |
|---|---|---|---|
| Ground Wood | 30.00 | @ | 32.00 |
| Sulphite easy bleaching | 60.00 | @ | — |
| Sulphite news grade | 60.00 | @ | — |
| Sulphite, bleached | 72.50 | @ | 75.00 |
| Sulphate | 60.00 | @ | — |

### Old Waste Paper
(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut | 3.00 | @ | — |
| Soft White Book Shavings | 2.85 | @ | — |
| White Blk. News | 1.60 | @ | — |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | 1.40 | @ | — |
| Light and Crumpled Book Stock. | 1.25 | @ | — |
| Ledgers and Writ- | | | |
| Solid Ledgers | 1.50 | @ | — |
| Manilas— | | | |
| New Manila Cut | 1.50 | @ | — |
| Printed Manilas | 1.00 | @ | — |
| Kraft | 2.25 | @ | — |
| News and Scrap— | | | |
| Strictly Overissue. | .85 | @ | — |
| Strictly Folded | .85 | @ | — |
| No. 1 Mixed Paper | .65 | @ | — |

### Domestic Rags
(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .09¾ | @ | .10 |
| Fancy Shirt Cuttings | .06 | @ | .06¼ |



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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-EIGHTH YEAR

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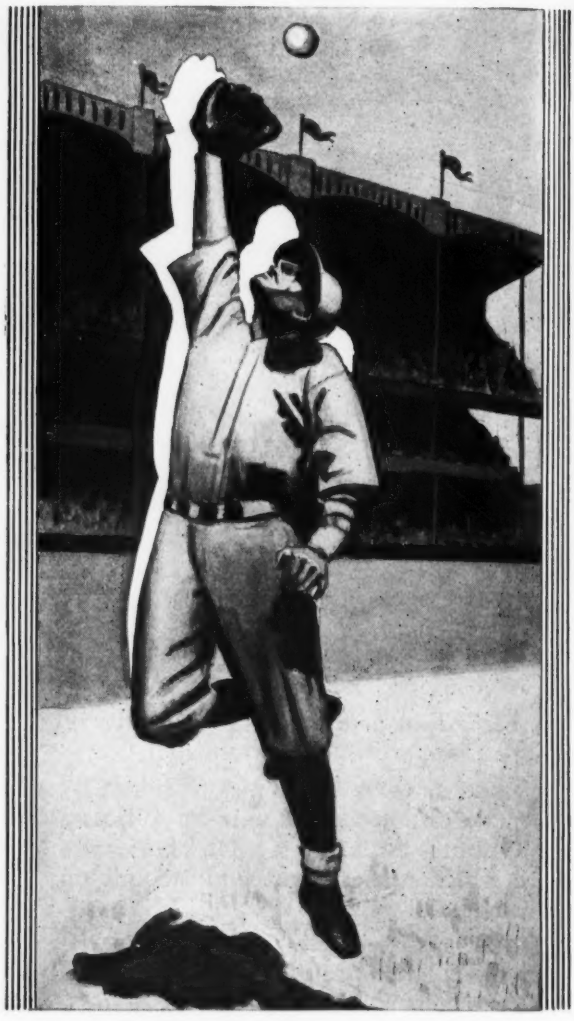
# THE *EXTRA* ADVANTAGE!



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